The Builder.

VOL. XXXV. No. 1818. SATURDAY, DECEMBER 8, 1877.

ILLUSTRATIONS.

New Baths and Washhouses, Tottenham-court-road, for the Parish of St. Pancras.—Mr. Horace Gundry, Architect 1234
The Cathedral of Limburg-on-the-Lahn: West Front 1225
Plan of Ventilation for School-rooms 1231

CONTENTS.

How the Bye-Laws worked at the Institute 1213
The Grosvenor Gallery 1214
The Ecclesiastical Architecture of Russia, in Three Eras 1215
The Works at Marlborough House 1216
Barrow-in-Furness 1216
George Semple, Architect: a Neglected Architectural Biography 1217
Architects' Assistants 1219
Middle-Class Houses in Central London and Paris: Royal Institute of British Architects 1219
Society of Painters in Water Colours 1221
Suspension of Notice to Repair 1221
The Hospital for Infectious Diseases Competition at Maidenhead 1222
Touting Valuers 1222
New Buildings, Fleet-street 1222
New Baths and Wash-houses for St. Pancras: Tottenham Court-road 1223
The Cathedral of Limburg-on-the-Lahn: Restorations Abroad .. 1227
The Clubs in Autumn 1227
A Step in an Archæological Dispute 1227
Halifax Parish Church 1228
Hyde Park, Kensington Gardens, and the Powder Magazine .. 1228
Birmingham To-Day 1229
City and Spitalfields School of Art 1229
Serious Charge against a Water Company 1230
A Peckham Builder's Claim for Plans 1230
A Builder Fined for Obstruction 1230
Vagrancy 1230
Fibre 1230
The Forth and the Tay Bridges 1230
The Petroleum Industry 1231
Ventilation 1231
Brittany Stone Monuments 1231
Architects and Public Companies 1232
"Our Schools of Art" 1232
New Science and Art School, Newcastle-on-Tyne 1233
Temple Bar 1233
Stained Glass 1233
Tube Wells 1233
Warehouses, Aldersgate-Street 1233
Granite Monoliths 1233
The Camberwell Workhouse Competition 1233
Maidenhead Hospital Competition 1233
Church-Building News 1233
Dissenting Church-Building News 1234
Variorum 1234
Miscellanea 1234

How the Bye-Laws Worked at the Institute.

A WORD on one or two points in regard to the last meeting of the Institute, the proceedings at which are reported elsewhere in our columns. The election of a long list of Honorary Associates, nearly all bearing names well known and honoured for their ability and distinction in various departments of the work of the world, caused a delay a little tedious at the time, but must be a subject for congratulation to those who wish well to the representative body of British architects.

In the discussion which took place on Mr. White's paper, read at the previous meeting and reported at considerable length in our columns, one or two points of practical importance were started in opposition to the views propounded in that paper. Mr. Cates, referring to what had been said, by implication at least, in the paper under discussion, in regard to the influence of the Crown agents, as holders of property, in opposition to improvement, called attention to what had really been done by the Crown, for two or three generations past, in effecting important improvements in the centre of London, and insisted that both the Crown and the typical "noble" landowners referred to by Mr. White were really rather sinned against than sinning,—were tied and bound by the chain of prior settlements which the law had sanctioned, and which were in reality absolute impediments to any improvement in the principle and practice of dealing with house property and building-land in a great portion of London. "Marriage settlements" had been the bane of much property that might be twice as valuable in every sense if not burdened with the antiquated conditions thus imposed. Mr. Hansard drew attention to the actual expenditure which would be entailed in acquiring and rebuilding an "island" of property contiguous to Regent-street, such as that described in the paper; but he was practically answered by Mr. Foster Hayward, who pointed out that Mr. White had not professed to go into that question—had merely given an example of how such a block of building might have been arranged *ab initio*. The President summed up in favour of English social habits and institutions, as at variance with the method of arranging houses proposed by Mr. White. It is only due to the latter gentleman to say that he replied to the attacks directed against his scheme with a degree of humour, point, and vivacity which might have made its mark in any assembly, and which was fully recognised by the meeting, and procured him repeated rounds of applause. Two objections, however, we think, hardly received an answer; one was a small but exceedingly practical objection, that of the repeated cutting up of the foot-path which would ensue if Regent-street, for example, were lined with a number of blocks of houses, each with its carriage-entrance giving access to the central courtyard; and this, in addition to the already numerous cross streets each of which obliges the foot-passenger to keep a good look out against the danger of being *écrasé*. The question of economy, *so far*, is also in an unsettled condition. In spite of all we believe as to the advantage, in an economical point of view, of the "flat" system, the fact remains, that rooms in some existing "flat" buildings cost more, in rent, than better rooms in ordinary "chambers." They are sometimes in a better building, it is true; but not always. And many will agree with the president of the Institute in thinking that English domestics will require some generations of training before they will be content to have their apartments and "offices" shrivelled to the dimensions which are considered ample in a *maison à loyer*, on the French principle. At the same time we hold that English servants, as at present constituted, are an exacting and self-indulgent race,—in the upper classes of them especially; and it was amusing to note that the remark, that to accept these newly-planned habitations we must all be content with French cooks, was received with a buzz of applause, as it well might be!

Spite of all objections to the flat system, real and imaginary, we are satisfied that it may be introduced in many parts of London with much advantage under good management, and we expect to find that this will be done.

But now we come to the point of doubtfulness in regard to the meeting, the first under the new rule, which adjourns the discussion till the evening following that on which the paper is read. We printed last week a letter from "An Old Member," finding fault with the new regulations generally, though we did not wholly agree with it. In regard to the setting apart of special seats for the Council, for instance, we see no objection whatever to this, in moderation; it is an arrangement tending to increase the dignity and formality of the meetings, and formalities of this sort are not to be despised, and it is due to members of the Council who may be engaged on the business of the Institute in an inner room, that seats should be reserved for them. Moreover, we can testify that on this occasion at least the Council benches were well filled, and there was none of that huddling together of sparse numbers described so pathetically by our correspondent. But we must say that the result of the new arrangement was in one sense most unsatisfactory, though precisely what we expected. We did not detect anything in the discussion which could be directly traced to the influence of the special and exhaustive thought supposed to be bestowed upon the paper during the intervening fortnight,—anything, in short, which might not as well have been said immediately after the reading of the paper. But we did find exactly the result that we expected,—that it was impossible for the President to confine the discussion within the limits necessary to give fair hearing to the paper for the evening. It must be admitted that the proceedings were driven later than they ordinarily would be owing to the time occupied in balloting for the great number of Honorary Associates; and no time was unnecessarily lost in this operation, which was managed in the most business-like manner. But in spite of all this, we have the fact that the discussion was intended to be closed, according to the new rule, by half-past nine, and that it was not in fact closed till five minutes to ten. Under these circumstances Mr. Neale, whose fine illustrations of St. Alban's Abbey covered the walls, and who was prepared, we believe, with a full and elaborate paper on that grand building, desired to adjourn, rightly feeling that neither was he in a state to read nor were his audience in a state to listen to such a paper after a long debate on another subject. In this he was warmly supported by Mr. Street (who did not scruple to say that the rule placing the discussion on the previous paper before the paper of the evening must be rescinded), and by the unanimous feeling of the meeting, who thought it unfair to a young writer of a paper to which he had given much trouble and thought that he should be forced to read it under such circumstances. So Mr. Neale's paper stands adjourned; the space to be found for it as the Council may determine; and, if we understand rightly, it will be read *first* on the 17th inst., and the meeting will commence at half-past seven instead of eight. The discussion will immediately follow the paper. This is the kind of difficulty which will constantly recur. It is impossible under these circumstances to keep a discussion within limits, when a meeting is interested in it, without an exercise of sheer despotism on the part of the chairman; and, at the best, who would care to read a paper he had given his best mind to, towards the close of an evening, and to an audience tired and sated with discussion? The paper of the evening must be the leading matter for the meeting; it is inverting the natural order of things to put a long discussion on another subject before it; and the matter will hardly be mended by adopting the suggestion we heard made, of reading the paper of the evening first, and then going to the discussion of that of the last evening,—"moving the previous question," as one may say. The bye-law on this point will have to be rescinded, or there will be endless dissatisfaction and confusion,—that is just the truth of it; and we are in a position to assure the governing body that this was the general feeling of the non-official majority last Monday evening.

Before quitting the subject of the meeting, we refer with pleasure to the exhibition of sundry sketches illustrative of Japanese architecture and design, by Mr. Conder, who has recently been summoned to teach architecture to "the

spirits in prison" in Japan. The appointment of a young English architect as a professor of architecture in a Japanese college is an interesting event, and suggests the question,—what architecture will he endeavour to engraft on the Japanese? There is a great opportunity, surely, for the evolution of "a new style."

THE GROSVENOR GALLERY IN WINTER.

If there were some doubt whether the new gallery in Bond-street quite fulfilled its mission in the opening exhibition held there in May, there can be no such doubt in regard to that which opened to the public on Monday last. If the Grosvenor Gallery is to become, as was hoped and by implication promised, a centre for exhibitions above the run of everyday taste, and appealing to the cultivated minority, a better step towards this end could hardly have been made than by combining in one set of rooms a large and almost representative exhibition of old English water-colours, and a still more numerous collection of original sketches and studies by great artists of the class now generally defined as "old masters." This latter part of the exhibition, though occupying less of the wall space, is in reality the most interesting and valuable portion. It cannot be called "representative," only because the productions of this class fortunately exist in too great numbers and in too many localities to be fairly represented in any single exhibition of moderate extent; what is to be seen here is but a gleaning. Such as it is, however, it is of such interest and variety that we rather prefer to defer detailed notice of this part of the exhibition till after a more leisurely survey, and will here confine ourselves to some remarks on the water-colours.

These are arranged in the large West Room of the Gallery, and are as far as possible grouped according to authorship; drawings by Turner and David Cox, the two greatest of English water-colourists (if we may for a moment speak of Turner in this light only), occupying respectively the greater part of the two end walls, and Girtin having a compartment to himself on the east side of the room. The arrangement of the exhibition and of the catalogue is due, we understand to Mr. Comyns Carr, under whose editorship also a larger edition of the catalogue, accompanied by facsimile reproductions of some of the old masters' drawings, is promised to those who are willing to subscribe thereto. The date of birth and death of each artist is inserted, for the most part, under the first appearance of his name in the catalogue; a useful memorandum for immediate reference.* The list commences, after a single specimen by Gastineau, with some dozen or so of Constables, of which there are three little drawings (10, 11, 12), exhibiting some of his finest qualities, and one rather larger, of "Old Sarum" (9), to which special attention should be given, for it is one of the most remarkable specimens that could be seen of the attainment of real grandeur of effect and sentiment in landscape, on a small scale. The drawing represents the historic mound at Sarum which marks the site of some monument of ancient barbaric greatness: the modelling of the sweeps and folds of the ground in the middle distance, apparently by single washes of the brush, the extent of distance to which the eye is carried, the grand effect of the sky, produce a result which is astonishing on a piece of paper a foot square. A great many of the lights are taken out apparently with the point of the knife, not a very usual method with Constable, but producing its intended effect without hardness or glitter. We pass to a group of names less familiar now; Wheatley, for instance, whose peasants are like "good-book" people, got up to look amiable and pretty, and to convince us of the superiority of peasant life to every other, but like no real people. We have got nearer reality than that, at all events, in more modern representations of the characteristic features of humble life. John Glover, whose finished and placidly harmonious drawings meet us at various turns in the room, is best represented by his large "Dunstanborough" (16) with its grand rock standing up in a warm glow of light in the background, and the "drawing-master" trees in the foreground, trees being apparently the last thing in nature to receive individuality of characterisation by English artists. Even Gainsborough is a great sinner in this way, as may be seen from a few small sketches of his in another part of the room, where the trees are indicated in a most routine manner; not Nature's trees, but Gainsborough's. Francia's "Stranded Vessel" (18) is a fine specimen of the school of water-colour in which all things were varieties of brown, except a fisherman's red jacket or two; and Cozens's drawings represent a type in which all things are varieties of grey. This colourless view of Nature, and the gradual steps by which colour is superinduced upon it, no doubt represent to a considerable degree not merely progress in taste, but progress in the development of the water-colourist's palette, which was so restricted in the earlier period as to confine the artist practically to something very like monochrome painting. Poor Cozens, who lived a quarter of a century before Francia, had not even Francia's browns; what he did with his greys is remarkable enough, considering his limitations. His "View of St. Peter's at Rome" (40) has a little more variety of tone,—"colour" one cannot say, and is notable as being an exceedingly clear and hard rendering of distant buildings without losing atmosphere. Among the drawings in this part of the room the views of "Ely" and "Durham," by George Fennell Robson (14 and 31), later in date, have peculiar excellence as combining finish and a great degree of realistic effect with a fine feeling for the picturesque; the small view of Durham has very unusual excellence in this respect. We next come to a group of Cattermoles. Here we are in the midst of colour, very fine and very rich colour; but the drawings of this admirably-gifted artist do not in one sense gain by juxtaposition: they show, indeed, how uniformly excellent was his work in its own way, but they also show emphatically how very limited were his motives in subject and composition. There is, however, one very bold and powerful sketch of the "Falls of the Clyde" (47), which rather takes one by surprise, and in general feeling might not inaptly be compared with David Cox. With regard to the works of this latter great water-colour artist, nearly fifty of which find place on the south wall of the room, there is hardly occasion to say anything further here; hardly room to say anything new. The principal drawings among those exhibited are well known; and the greatness of Cox's style, as an exponent of the highest and most powerful capabilities of pure water-colour, is recognised and done justice to universally now. This can hardly be said to be the case with the works of the painter who comes next on the walls, John Sell Cotman; nor, we must add, is that gifted and unfortunate genius, who was compelled to waste the best part of his life in the drudgery of school teaching, at all adequately represented here. Some of the drawings exhibited, such as that called "A Bridge" (101), show something of his peculiar power as a colourist, but his finest productions are not here. A curious contrast between real and false genius, however, is suggested on comparing even such works of Cotman's as are collected here with those next adjoining them by Barrett. It is difficult to understand on what principle this concocter of artificial classical landscapes finds a place in such company. There is a certain capability of doing what he meant to do, certainly; but, then, it never was for one moment worth doing. Nor does Copley Fielding's delicate and weak manner tell very fortunately amidst much work of a far higher and more powerful class; it must be said, however, that his qualities, never the highest, but still with an excellence of their own, are not adequately represented. Of far higher interest are the drawings of an artist much less popularly talked of, who, to distinguish him from the greater man of the same name, is described in the catalogue as "Turner, W. (of Oxford)." "Lowering Weather" (124), a large highly-finished drawing, has very fine qualities; we have seen and admired it before, but are surprised to find how it holds its place in such a collection as the present. Another smaller drawing by the same hand, "Stonehenge" (156), which is new to us, is a truly remarkable work; it represents almost the first complete view of "the stones" on the road from Amesbury, and is as minutely correct in regard to the whole scene as if topographical realism had been a main object, and at the same time is a drawing full of fine and poetic feeling. This remarkable little work is the property of the Duke of Devonshire. One is obliged to confess that John Varley, much as we owe to him as one of the founders of the English water-colour school, does not look remarkable in this collection. He, it is true, is not very largely represented; but what strikes one in comparing his works with those of some other good names, old and new, is that he was not so certain as to his scale of colour and his mode of treating nature as were some of the earlier and later men. He has not the completely balanced though low-toned harmony of Girtin; he introduces strong and decided colour, but seems unable to combine it with his whole scheme of landscape; it is colour introduced partially, and as if experimentally. And in regard to composition and general impression, the landscape of Cornelius Varley, "Farm Buildings" (135), is superior to anything by the other of the name who is represented. This is not, as its name might imply, a picture of buildings; these merely stand out as a central object in the middle distance. Then we come on a collection of De Wints, amongst which a large landscape by Callcott seems to find a very natural position, for its feeling and handling show an affinity with De Wint, only with poorer tones; it is what may be called a very finely-modelled landscape, almost entirely deficient in local colour. This latter deficiency may in a sense be said to exist in De Wint; but then his tones, though when considered absolutely they are unlike nature, are so true relatively, and so rich and harmonious for the most part in themselves, that the result is quite satisfying to the eye and mind. We say for the most part, for there are works of his here which are not up to his best standard (indeed, none of his really finest productions are exhibited), and in which the colour is of a doubtful and nondescript kind. It is possible, however, that the background against which the drawings are hung has something to do with this. Even when oil paintings were exhibited at the Grosvenor Gallery the hangings were found fault with as injurious to the pictures; and, when we come to water-colours, it is difficult to imagine anything less calculated to set them off than a background of strong crimson. In "The Hayfield" (179) the haystacks look almost green, and we attribute it to the preponderance of crimson in the room. Such delicate tones as De Wint's demand very tender treatment in regard to their surroundings.

We may pass over with a word of recognition the familar work of William Hunt, just observing how completely such sound conscientious art as this, though limited in its range, keeps its place,—how thoroughly "safe" it is. We fear it is impossible to say the same of another set of works bearing a well-known name, which hang near. With all the picturesque effect and remarkable facility in his own line which is shown in the numerous drawings of Prout, the juxtaposition of a considerable number of them only confirms the idea which has been current for some time among thoughtful critics, that his success was due to something very like a trick in picture-making, rather than real artistic insight. Singularly enough, our eye was caught by a work belonging to the same class as Prout's, and hung with his drawings, a view of the house of Rienzi at Rome, and our reflection was that after all Prout could be more forcible and masculine in style than we had supposed. But the pleasing deception was momentary; the drawing was by Cromeck. Any one who would compare it with the drawing by the more popular artist immediately over it, must see how mannered and conventional is his treatment of masonry in comparison, although there is always that sort of effectiveness which catches the eye of the majority of spectators. Poor Fred Walker is represented by two or three small works, not among his best in feeling, but having very fine qualities; and we may note as an architectural and topographical curiosity, John Varley's little drawing (275) of "Bow Church, now destroyed," while Bow was still a country village, with a large white horse cut out in wood, standing out in the air as a signboard. We are in the region of the Turners now, but cannot attempt special comment upon Turner here, of course. We may just notice one small drawing, "A Rocky Fastness" (251), as a remarkable instance of the same quality we noticed in a drawing of Constable's, the effect of grandeur on a small scale. There are several interesting things in this part of the room also; interesting as curiosities, or as the work of out-of-the-way names. Coming round to the Girtins we find the artist very well represented by about twenty drawings, including some of his finest works. We analysed Girtin and his place in the art pretty fully on the occasion of the fine exhibition of his works at the Burlington Club,* where,

* We are glad to observe that the inconvenient method of commencing the numbering afresh in each room, on which we commented on the occasion of the first exhibition, has been abandoned.

* See *Builder* for June 5, 1875.

if we remember rightly, most of the drawings hung here were to be seen. Our former opinion is in no way modified by this fresh examination of a number of them; but the effect of some of them is manifestly different in their present position; drawings which might have seemed fully powerful, and even rich, in tone, when opposed only to others by the same hand, seem much weaker here; an effect which would naturally result from their being seen in opposition to some more modern works in a higher scale of colour, but which, in this case also, we are disposed to attribute still more to the crimson hangings. It is really surprising how different the grand view of "Durham" (300) appears from what it looked like at the Burlington; and we cannot but think these drawings suffer from the prevailing colour of the room. On a pale green-tinted wall they would be quite different things.

The screens in the middle room contain several specialities worth looking at. There are some portrait studies, sketches on a small scale by Reynolds, Romney, Lawrence, and others; some of Blake's drawings, which seem out of place among their surroundings, and had better have been omitted; Blake was fully illustrated at the Burlington Club last year. There is a remarkably interesting and able life-study by Wilkie (369), signed and dated, from a subject set by himself at the Royal Academy. There are some very good cart-horse drawings by Micholowski (404, 407, 409, 418), and a large drawing by Millet, "The Tramp," which is full of pathos and intensity of feeling. Maclise's highly characteristic portrait of Turner (513), a half length sketch, is a thing to be noted. The name of Decamps appears in connexion with one small drawing. It is out of place here, of course, as this is professedly an exhibition of "water-colour drawings by deceased artists of the British school," and in any case it is almost absurd to hang one small sketch by such a great artist in what is meant as a representative exhibition. But how we should like to see a collection of the works and studies of Decamps in the Grosvenor Gallery on some future occasion. We commend the idea to Sir Coutts Lindsay and those whom it concerns, thanking them for what they have already given us, especially the Old Masters' drawings, to which we shall return.

THE ECCLESIASTICAL ARCHITECTURE OF RUSSIA IN THREE ERAS.

I. BYZANTINE INFLUENCE. 989–1475 A.D.

THE introduction of Christianity into Russia was nearly contemporaneous with the rise of that monarchy in the middle of the ninth century, but it was not till the reign of Vladimir the Great, more than a century afterwards, that the Christian faith was definitely adopted. The historian tells us that that prince, after the merits of Judaism, Roman Catholicism, Mahommedanism, and Greek Christianity, had been successively canvassed, sent deputies to the countries where these religions were professed, to report upon their claims to his attention. It would appear that the imposing ceremonies of the Greek Church, as witnessed by the deputies in the magnificent St. Sophia at Constantinople, made a most powerful impression on Vladimir, who thus resolved to enter the communion of the Oriental Church, and compelled his people to follow his example. It is from this period that dates the history of Russian ecclesiastical architecture, borrowed from the Byzantine, and which had developed itself in such splendour in the creation of Arthemeus of Tralles,—the Constantinople Basilica of Santa Sophia. In the course of time the grand princes of Russia, of the tenth and eleventh centuries, were in constant intercourse with the Greek emperors, with whom they maintained friendly relations for a long period. All this had, no doubt, great influence on the propagation of Byzantine art in Russia, for we find that the capital, Kief, as described by Ditmar, bishop of Marseburg, a contemporary of Vladimir the Great, owing to its numerous inhabitants and prosperous state, possessed hundreds of churches, and we have the testimony of Adam, one of the canons of the Bremen Cathedral, who called Kief (1072) a second Constantinople. Only the Tartar invasion (1240) put a stop to the flourishing of the Byzantine adoptions, and after a long period of stagnation in the national development indirectly contributed to centralisation, and by the same evoking during the period of the first Russian Czars the development of the national art. But before entering into a description of the buildings, it will be necessary to notice the transition from a Byzantine basilica to an orthodox church. We have only to recollect how and from what the basilica was formed. A long building, with a rounded end on one side, with a portico on the front façade and a transept covered with a dome, it was created out of the Roman courts of justice and assemblies, and in the form in which it appears in the Cathedral of Justinian was almost ready for an othodox Greek church.

But in the Latin basilica the transversal nave is relatively a little longer (in the form of a Latin cross), and was thus adopted as the ground plan of the Gothic churches of Europe. In Russia another form was adopted, that of a Greek cross with equal sides, in which the transversal nave is nearly of the same length as the great nave. Another distinguishing feature of the orthodox ecclesiastical architecture is the ikonostas, or continuous screen separating the altar from the part of the church destined for the congregation; then the kliros, or choir for the singers, which was formerly placed on both sides of the great nave, and subsequently removed nearer to the ikonostas; and, lastly, the gallery running along the walls: these are the chief peculiarities of a Russian church. The domes have not only been retained but have been increased in number, and have assumed quite an original form of their own. Frescoes, gilded walls, mosaics, thick square pillars, narrow windows, and the mystic twilight of the Greek basilica, have not only passed over to Russia, but have become the necessary conditions of the national art of the most recent date. The most ancient basilica in Russia in the Byzantine style is, so far as we can tell, the Dessiatinny Church at Kief,—the magnificent temple dedicated to the Virgin Mary. This church was constructed and embellished by Greek artisans and artists invited by Vladimir the Great from Tsargrad (Constantinople). The site chosen was the spot sanctified by the first Christian martyrs in Russia (the Varague-Christians, Theodor and John). The Dessiatinny Church was begun in the year 989, and took seven years to build and decorate. In 996 it was consecrated, and continued to exist for 244 years; Batui, the Tartar invader, destroyed it in 1240, and the ruins, consisting of heaps of bricks and stones, were carried away by the inhabitants up to the year 1635, in which year the metropolitan of Kief, Peter Mogila, partially restored it. Two hundred years later, in 1820, Captain Annenkoff, of the Russian army, undertook on his own private means the reconstruction of the Dessiatinny Church. In the process of digging the old foundation was disclosed, which presented the form of a wide quadrangle with three apses on the eastern side, the middle one being the largest, and destined for the archbishop's stall. The length of the whole building along the straight walls was 140 ft.; from the arc of the central apse to the western doorway, 168 ft.; and the width 112 ft. The height is unknown, but judging from structures somewhat similar to the Dessiatinny Church, it may be estimated at 84 ft. without the domes. The depth of the basement exceeded 4 ft. The plan presented six longitudinal and five transversal walls; four longitudinal and five transversal interior walls under the flooring of the church served as the foundation on which rested the pillars, the partition walls which supported the arches, vaults, and the gallery. Outside the building there were buttresses. The thickness of the clear walls was 2 ft. 8 in. The rubble underneath the walls consisted of large granite stones, and in some places of limestone and bricks; and at the commencement of the walls were found three kinds of bricks; some larger than the present 10½ in. bricks, others again of a wide square shape 12 in. each way, and ¼ in. thick, like tiles. This kind of masonry with the Greeks was called *Izodom*,—of equal layers; bricks of a similar kind are to be found in the walls of the Colosseum in Rome. The cement is composed of a mixture of lime with finely pounded and sifted brick; and the layers of it were thicker than the thin bricks, and it was used also for cementing the marble linings to the walls. The pavement of the church was composed of dark red granite, with a chequered design of large octagons, with squares in them. Inside the altar space the place for the high altar was paved with dark-coloured slabs, and around it with mosaic squares of marble and jasper in various colours. The church had marble pillars inside, which is proved by the fragments which were found of bases and capitals in the Byzantine style. The walls of the altar space were decorated with mosaics, and the other walls of the church painted in fresco. On the western side the gallery formed the second story of the edifice. In 1828 the foundation was laid of the new church, which was consecrated in 1842. The chief altar is dedicated to "the nativity of the holy mother of God," and the two altars on each side are in the name of the Grand Prince Vladimir and St. Nicolas. The plan of the new Dessiatinny Church is a square, each side of which measures 93 ft. The façades are the same on every side. The eastern side is plain, and the other sides have decorated entrances with archivolts, architectural arches or semicircles, and have open steps. The chief entrance consists of an arch deeply recessed and ornamented with small columns, which project one before another, as in the ancient church doorways. The main body of the edifice is of two stories. The height to the roof is 70 ft. Above the roof rise five domes supported on drums, the middle drum being 42 ft. in diameter and 37 ft. 4 in. in height. The extreme height of the whole structure, including the cross, is 147 ft. In laying bare the foundation of the old church, bells were found, which probably hung in a separate belfry-tower. In the beginning of the eleventh century (1017) the foundation-stone was laid of the Church of St. Sophia, the most celebrated and magnificent structure of that time. It was raised as a memorial to the faith, and as a thanksgiving to the Giver of all Good for the victory gained by the Grand Prince Yaroslaf over the Petchenegues. The plan of the Kief Cathedral of St. Sophia is in the proportion of one to four to the Church of St. Sophia at Constantinople, upon the design of which it is supposed to be founded. The foundation of the Kief Cathedral is from 6 ft. to 9 ft. deep, and the materials used were the same description as those laid down for the foundation of the Dessiatinny Church. The basement contains the crypt, in which were buried the ancient Grand Princes of Russia, and in subsequent ages the Kief metropolitans. The floor of the church is of dark crimson granite. The interior, with the exception of the transept, is formed of arches about 9 ft. in span. These arches rest upon twelve cruciform pillars, which also support the gallery. The interior of the church is in the shape of a Greek cross, in width about 26 ft., the longitudinal and transversal measurement of the cross, 96 ft., including the altar, but without the space for the bishops' stall, which presents an extended semicircle, and the south and north sides of the cross are the lateral porticos. Between the second row of pillars there are two octagon-shaped pillars, 3 ft. 6 in. in diameter, and about six diameters in height. These pillars are without bases, with plain capitals in the Ionic style, and are faced with marble. At the angles of the quadrangle of the transept are erected four piers, which support the arches carrying the drum of the dome, which is about 23 ft. in diameter. The golden ground surrounding all the mosaic pictures occupies the greater portion of the surface of the walls and arches. The mosaics have been preserved principally on the altar walls, and in places on the wall supports and the arches. In the main altar-space above the bishop's stall there are two tiers of mosaic figures; in the lower one are represented the Byzantine prelates of the third and fourth centuries, and in the second the Lord's Supper. These tiers are divided by wide bands of ornamentations in mosaic. Above the second tier, just over the middle of the archbishop's stall on the convex surface of the hemispherical vaulting, there is a very remarkable colossal figure in mosaic, representing the Virgin Mary, called "The Imperishable Wall." The Kief Cathedral of St. Sophia, besides mosaics, contains also Greek frescoes, which were discovered in 1843, by the Academician Solntseff; they were found on the wall supports, and partly in the galleries, where ages ago chapels had been erected. The large arches under the middle drum are decorated with paintings of the four Evangelists. The general plan of the church is a quadrangle, as nearly as possible square, for the ancient structure of the walls has been preserved only in the middle of the existing mass. The length of the cathedral from east to west is little over 119 ft.; and from north to south 161 ft. With the additions which were subsequently made it is larger. The height to the roof, together with the cornice which runs alongside it, is 73 ft. 6 in., and the height of the

entire structure, from the surface of the ground, is 154 ft. There was besides a covered wooden gallery round the outside of the building. These galleries were in ancient times destined for penitents who were excluded from the church proper. The number of domes of the St. Sophia of Kief erected by Yaroslaf is not known, but from the time of the Metropolitan Peter Mogila in the seventeenth century, up to the year 1803, there were eleven large and four small ones. In 1850, when the church was being restored, seven gilt crosses were added to the domes. Inside the cathedral, the gallery is supported by semicircular vaulting, and has, instead of a balustrade, a barrier composed of slabs of dark crimson granite placed on edge, which is decorated with carved sculptures, in relief, of foliage, &c., and pretty interwoven ornamentations in the Greek style. In the walls of the church were found iron fastenings, and in the vaulting hollow burnt clay vessels, used for strength and lightness.

In 1240 the Tartar invader Batui, above mentioned, destroyed the cathedral of St. Sophia, but in 1385–90 it was again restored by the Metropolitan Cyprian. In the sixteenth century the Uniates (Greek Catholics) continued the devastation of the Tartars. The cathedral was again repaired by Peter Mogila, who also made a few alterations inside. The walls also were strengthened by buttresses, and the windows were made wider. In the eighteenth century the domes were covered with tin plates, and gilded, and in the present century repairs have been made inside, and the outside has also been decorated. During the lifetime of Vladimir the Great, by the order of that monarch the Bishop Joachim was sent to Novgorod, for the purpose of converting the inhabitants, who were at that time Pagans, to the Christian faith. This bishop built at Novgorod, in the year 922, a small wooden church, dedicated to St. Joachim and St. Anne. Subsequently the same archbishop commanded to be built of oak the church of St. Sophia, in the Torgovistche, in Bishop's-street, on the banks of the river Volkhof, in the words of the chroniclers, "with thirteen domes, cunningly and fairly built and decorated." Upon this church being destroyed by fire, the Prince of Novgorod, Vladimir Yaroslavich, in imitation of the Church of St. Sophia at Constantinople, and according to the model of the existing Kief Cathedral of Sophia, erected a stone church named after the latter, on the left bank of the Volkhof, which was completed in seven years, and consecrated in 1052. The measurement of this church, together with the later additions at the sides, is,—length, 105 ft.; width, 119 ft.; height, with domes, 161 ft. The interior plan contains ten square pillar supports ranged in the middle of the church in the form of a Greek cross. Above, on the three sides are the galleries, which contain the sacristy and library. The ancient walls, which are very thick, are constructed on the same principle as those of the Kief Cathedral, with thick layers of mortar. In ancient times, the western and two other sides of the exterior were surrounded by a covered gallery. Both the construction and decoration of the Novgorod Cathedral were at the very beginning conducted by Greek artisans and artists. The interior surface was painted *al fresco*, of which there are still seen traces in the altar-space under the paintings on the wall above the archbishop's stall. The chief altar is separated from the church by a partition-wall, to which the ikonostas is joined. The windows were narrow, and pierced at wide intervals. Eventually some of them were made larger. Opposite the ikonostas, on the eastern side of the two front pillars, two stalls are erected, one for the Czar, the other for the bishop. Both are ornamented with rich carving, with crosses in fret-work at the top, and crescent-shaped figures below. On the north-eastern side of the gallery there are frescoes representing the Prince Vladimir, the founder of the church, and his father Yaroslaf, his brother, and other relations. The domes of the cathedral of St. Sophia have been frequently altered, of which there are at present five, and one above the sacristy. The roof, with its figured cornice, is a remnant of the work of the seventeenth century. A belfry-tower was added to, or rather erected by, the side of the church in 1439. After its first completion, this church, up to the fifteenth century, was frequently damaged by fire, and suffered from the devastating enemy. At Tchernigof, in the first half of the sixteenth century, was erected a stone cathedral, dedicated to the Transfiguration. The exact year of its foundation is not determined, but it is known that the foundation-stone was laid by Mstislaf the Brave, son of Vladimir the Great, who ruled over Tchernigof from 1024 to 1036. The site chosen by the prince for this church was on an eminence in a fortress where, in very ancient times, there existed a pagan temple. The church was completed in the reign of Sviatoslaf Yaroslavich, Prince of Tchernigof, about the year 1004, and consecrated in 1076. Sviatoslaf was buried there. The plan of the church is nearly a square, length 105 ft., width 112 ft. The construction, decorations, &c., are of Greek execution. The original façade has disappeared, but the antiquities are retained in the disposition of the walls, in the remaining lower portions of the pillars and the rubble basement containing a crypt. Inside the church extended two rows of columns from east to west; they supported the gallery. According to tradition, the lower pillars were encrusted with marble of a reddish colour, with plain bases in the shape of slabs, with iron capitals; the front pillars, or those nearest to the ikonostas, were of an octagon shape. The gallery extended respectively from the east and west sides to half the length of the church, and joined over the western entrance of the church; the gallery had square pillars, also faced with marble. They supported the arches of the church and the middle dome. Between these was a barrier of marble slabs. Of the three altar apses the middle one projects more than the others. From the year 1240 up to the reign of Alexay Mikhailovich, for a period of more than 400 years, this church stood in ruins. It was finally restored by command of Catherine II. in 1780. The galleries on the southern and eastern sides were removed, and were retained only on the western wall above the entrance to the church; the cracks in the walls were filled up, and the parts which had suffered from fire were repaired. Behind the left kliros, close to a pillar, a pulpit is put up, with a baldachino over it; the floor is made of cast-iron plates. The facades of the two towers which stand on both sides of the western portion of the building are of modern architecture; the left one is called the Terema; the lower, the right one, the belfry. The second stories of the towers are round, and have each eight wide arches; above these three small recesses, above which is an attic in the shape of a wide girdle; above this again rise Gothic flèches, on the apexes of which are spherical heads, with crosses. At present the cathedral has five domes, of which the middle one is 105 ft. high from the floor of the church. The northern and outward doors of the church have new porticos over them, copied from the new portico of the northern entrance to the cathedral of the Archangel at Moscow.

THE WORKS AT MARLBOROUGH HOUSE.

Readers are aware that considerable works are being executed in Marlborough House, with a view to remedy its evil sanitary condition. The drains were found to be of ordinary brick construction, full of soil, the stench from which was horrible. New pipe-drains are being laid, but we are informed that the soil from the old drains is actually being *dug into the ground and left there*, to save the expense of cartage! But for the source from which the information reaches us we should refuse to believe that so indiscreet an act, to use too mild a term, had been perpetrated. We have most serious doubts as to the wisdom of the mode proposed for ventilating the drains, but are unwilling to condemn on insufficient information. Who is responsible for the works?

Loans to Municipal Art Galleries.—A deputation, appointed by a conference of municipal corporations held at Westminster Palace Hotel in July last for the purpose of obtaining grants of loans to municipal galleries and museums, has waited upon the Trustees of the National Gallery to ask for loans of pictures and drawings from the National Gallery, and generally to have the benefit of their co-operation. The Trustees present were Mr. Russell (chairman), Lord Hardinge, Sir Walter James, Mr. Warner, and Mr. Burton. The deputation consisted of the Mayors of Birmingham, Leicester, and Wolverhampton, Alderman Collings (Birmingham), and the ex-Mayors of Wolverhampton and Ipswich. The Trustees promised to give their answer in writing.

BARROW-IN-FURNESS.

Vulcan, in Homer's days, was pictured as a destroyer, but in our days "*l'ignipotent*" is a creator of towns. Alike on the east coast and the west, there are built up on the foundations of the iron trade, more especially of recent years, vast towns and districts. Middlesbrough owes its importance to that great industry, Stockton and the two Hartlepools have been benefited thereby, and most of the towns on the north-east coast have been benefited by the iron manufacture, whilst the whole of Cleveland has felt the impetus of the iron-mining development. On the west there has been an equal growth, and though it is shown in the district of Furness generally in the creation of new centres of population, and the extension of old hamlets and villages, yet perhaps the fullest proof is to be found in the growth of Barrow-in-Furness, the Middlesbrough of the west coast. The rapidity of its rise, the extent of its growth, and the apparent soundness of its trades more than rival indeed those of the Teesside town whose praises Mr. Gladstone sang as "the youngest born of Britain's greatness." Barrow dates its practical commencement later than does Middlesbrough, but in many respects there is a similarity between the two towns in other than the fact that in both the iron manufacture is the chief and the controlling industry. Both have added allied trades to that of iron, both are shipbuilders, and shipping ports; both depend upon the regions round about for their mineral treasures; both are public-spirited, enterprising, and pushing; and both have thrown into the shade older towns near which might have seized the advantages the newer towns have known. Middlesbrough, however, has not advanced beyond its compeers to the extent that Barrow has; for the iron manufacture is diffused along the banks of the Tees; coal exportation is in the hands of the Hartlepools chiefly; and the steel manufacture is taking root outside the bounds of the ironmaking town. But though at Barrow the hematite iron industry is diffused, yet that town is its centre, to which all the mining villages and towns that have sprung up are subsidiary. Places like Ulverstone are distanced in the race; and the smaller towns and villages where the mining or iron industry is located are only so many stars that derive their light from the great solar centre of the Furness, which seems to have sprung into being, fully equipped, as the goddess of old sprang from the brain of Jove.

Barrow-in-Furness dates back barely thirty years. One of the best of our Gazetteers, published a few years before, could find nothing to mention of the place of the future town, even by name, its nearest reference thereto being the magnificent ruins of Furness Abbey. The whole district at that date was in the state of embryo. Dalton was a pleasant little place of some 760 inhabitants; the iron trade was scantily carried on in it, so far as mining was concerned; and similarly at Ulverstone, the extensive parish of which contained about 7,000 people; whilst the whole of the district was in the condition which Cark and Cartmel are now in,—quiet places, where commerce remained stationary, and cattle-fairs and hirings formed the chief exhibitions of busy life to disturb the monotony of a still district. As to the place where Barrow now stands there are, however, historical associations, although the name of the town has provoked many an etymological dispute. On the sandy shore of the arm of the sea which separates Walney Island from Furness, there had been for long a community deriving its subsistence in large part from the rich and pure iron ore it gathered and shipped. But the limited nature of this trade may be learned from the fact that though the "Peru of Furness" has had its treasures extracted in small degree for hundreds of years, yet a writer describes that extent as such within remembrance as to afford employment for half a dozen old men "in scratching up a little of the best of it; leaving it for the present and future generations to raise millions of tons." Prior to this, the purity and richness of the ores induced inquiry for them, and the charcoal furnaces send supplies to some extent from Furness; but down to the beginning of the present century the quantity exported is stated not to have exceeded 3,000 tons yearly, derived exclusively from the mines at Lindal and Whitriggs. Slowly and steadily the trade in iron ore increased, but the quantity locally smelted was small; Mushet's "Papers on Iron and Steel," giving the total quantity of iron made in the old

charcoal furnaces of Lancashire in 1839 as only 800 tons. It was a little more than thirty years ago that the need of railway communication between the mines and the port of shipment impressed itself upon the district, and in 1845 Parliamentary powers were obtained for a line of railway which was subsequently extended north and south. These lines, when formed, gave an impetus to the iron trade, first swelling the export of ore, and then causing the commencement of the vast smelting works on which the foundations of the town were built up. As a result of that increased use and sale the produce of the mines of the Furness district has very largely increased, and now at least four of its mines have an output of over 100,000 tons each,—one of the four coming up close to a yearly output of a quarter of a million tons; and the twenty-four mines now at work in the Furness district have, in the total, an annual production of over 984,460 tons of ironstone; whilst the thirty furnaces in blast out of the forty-seven erected, yearly make over half a million tons of pig iron.

Other trades have been developed. The Bessemer steel works are large,—the number and capacity of the converters being stated in the latest official statistics as 18 of 6 tons capacity each; the shipbuilding works are of considerable extent; the flax and jute works are extensive alike in the area covered and in the work executed, whilst the buildings themselves are in a style which makes them an ornament in great contrast to buildings in older towns where the unmitigated ugliness is compensated only by the usefulness. Wire, engineering, brick and tile, rolling-stock works, foundries, saw-mills, and rope works, with other important if subsidiary trades, have a place in the ranks of industry in Barrow. Its fleets of merchant shipping are large: the lists of one owning firm include the names of about a score of vessels, and those of three others the names of from eight to twelve ships or steamers. The subsidiary industries, the shipping trades, the vast manufactories and works have built up a commerce on which a vast population depends. The growth of that population has been rapid: in 1847 it was stated to be only 235; in 1861 it was 3,000; in 1864 it had grown to 10,068; and its present number has been variously estimated at from 34,000 to 40,000. When the charter of incorporation for the borough was applied for, in 1866, it was stated that there were 8,000 ratepayers in the town; its area, prior to the recent addition, was close upon 8,000 acres; and even after a period of severe depression the additions to the rateable value in the year just concluded amounted to over 1,000*l*. The births monthly were, according to the last report, 160, and in a similar period the deaths, at a low death-rate, were 47. On the registers of the large and costly Board schools are the names of over 3,000 children, on those of the denominational schools over 2,000 names. To supply the thirst of the people, there are 89 public-houses and beer-houses, with 45 additional beer-houses having licences for the sale for consumption off the premises, and 11 grocers' licences. And, as a consequence, or an accompaniment, there were 351 persons proceeded against for being drunk and disorderly last year,—about a tenth part being women. The police force numbers 41 men and officers; the "tramps" passing through Barrow are many in number,—in one year 4,000 being "relieved." The School of Art Classes receive 100*l*. yearly from fees; and a permanent home for these is projected at a cost of 4,000*l*. New workhouse buildings are contemplated,—the number of paupers in the present one being about 53. Friendly societies have taken kindly root in Barrow; temperance has its local habitation as well as name, and in addition to parent societies, good Templars, and some of the benefit orders of teetotalism, are represented; whilst co-operation has flourished, and sent forth branches into the neighbouring mining villages. Episcopacy and Dissent, in most of its phases, are well represented, and the various institutions of towns, for bodily and intellectual recreation, as well as for other allied purposes, have been early planted.

The prospects of Barrow,—emerging, as it now seems to be, from the cloud which it, in common with all other iron-producing districts has known,—are bright. It has been recently shown that its chief company,—the Hematite Steel Company,—has for eleven years "earned and distributed amongst its shareholders an average return of fully 20 per cent. per annum." In some degree this is typical of the state of trade, for whilst in the east the rolling-mills are idle, in the north-west briskness characterises them, for the growing preference for steel rails gives to the hematite districts a great advantage. In the large stores of iron that lie behind it Barrow has the foundation of future growth, for these stores are not only vast, but they consist of rich and pure iron ores, adapted for use to meet the growing demands for the "metal of the future." Increasingly, the demand is now for steel for railway formation purposes, and there cannot be a doubt that the same metal will to a large extent supersede iron for other uses. As the depository of the largest stores of red hematite iron in Britain, Barrow may well look forward with confidence to the increase of steel requirements, for it points to an increased demand for her pig-iron, and increased work for her enlarging steel-mills. She has able men at her helm, their monetary resources are vast, and their confidence in the future of their town is undoubted, whilst times of depression in one of the chief industries only seem to increase their exertions to develop other trades on which that great town may in part depend. But although Barrow seems in its infancy to have had careful training, and perhaps at one period its growth was a little forced, yet it is now able in great degree to throw away the bladders that in times past helped to sustain it. In taking this course, its leaders are building up a protection against the periods of depression which are so common in many of our great industries, and still more against those possibilities of change which are so great in the iron trade. As, however, the demand for the ores of Furness increase, whether for home manufacture or export raw, the development of Barrow must progress with it, for it is the trading centre of the Furness mining district, and to it all that benefits that wider district tends. Its circle is widening, its commerce, by sea and land, draws contributions from an extended and extending area; it is overcoming the effects of too-rapid growth, and its trades, after a check, are again beginning to show signs of returning prosperity. With these local inspiriting symptoms, the future of Barrow-in-Furness must advance, though the period of the commencement of its next forward march may in appearance be deferred until there shall be a fresh wave of trade prosperity generally known in the kingdom, the impetus of which will show the local advances that may be registered.

GEORGE SEMPLE, ARCHITECT.

A NEGLECTED ARCHITECTURAL BIOGRAPHY.

With Notes on a rare Edition of his "Building in Water."

GEORGE SEMPLE, a Dublin architect, towards the close of his professional life, in 1776, published a now scarce work, entitled "A Treatise on Building in Water," in two parts. The first part particularly relates to the repair and rebuilding of Essex Bridge, Dublin, and bridge-building in general, with plans properly suited to the re-building of Ormond Bridge, in the same city. The second part deals with original quick and cheap methods for erecting substantial stone buildings and other works in fresh and salt water, quaking bogs or morasses, for various purposes, "fully laid down and clearly demonstrated by 'Twelve Practical Propositions,' but not in any case exceeding ten fathoms deep: together with a Plan for a spacious and commodious Harbour for the Downs, in England, projecting to 20 ft. at deep low water."

Semple's work is illustrated with sixty-three copper-plates, and is dedicated "to the King" (George III.). A word about the dedication, as it has some bearing upon particulars which we shall furnish further on. The architect says, in his dedication,—"To whom, then, can I, with such propriety, inscribe these sheets as to a monarch who is peculiarly interested in the subject of the most important part of them, that of a 'Plan for a commodious Harbour in the Downs.' I lay them with the utmost deference and humility at your Majesty's feet. They are the fruits of a close and unremitted application of twenty-four years," &c. This Dublin edition of 1776 of Semple's work, "printed for the author by J. A. Husband, [28,] Abbey-street," had long been supposed to be the only edition of "Building in Water" extant. A few weeks ago, however, the present writer accidentally picked up on a London street book-stall an enlarged edition of Semple's work, containing a third part—*i.e.*, "Part III."—not to be found in the original edition, or even indicated as forthcoming at a future date. The writer having in his possession for several years a copy of the scarce original edition, has been enabled to compare both volumes, but one little difficulty has presented itself, which weeks of research and correspondence have not enabled him to remove. The enlarged edition of Semple's picked-up, though otherwise clean, and in good condition, is unfortunately minus its title-page and dedication, and another copy of the enlarged edition of "Building in Water" cannot be found, though searches were instituted in the chief public libraries of London and Dublin, and inquiries made among a number of the oldest booksellers. There is not even in the valuable libraries of Trinity College, Dublin, the Royal Irish Academy, or the Royal Dublin Society, one copy of any edition of the work, and the British Museum alone in London has a copy of the original edition with two parts, which came into its possession with the library of George III., to whom "Building in Water" was dedicated, as already mentioned, by the author. In 1776, George Semple when he printed his edition in two parts was residing at 53, Queen-street, Dublin, but his name disappears from Wilson's "Dublin Directory" after the year 1782. Some are of opinion that he left Dublin in that year for London, but we cannot at present produce any sufficient authority for the statement. The type and paper of both editions of the book in our possession are to all appearance the same, and the alterations in the enlarged edition as far as Part I. and Part II. are concerned are confined to the final paragraph, in which some sentences are omitted and others altered and added with a view of preparing the reader for what was to follow in Part III. In this paragraph also numbers are used in referring to the previous plates instead of Roman letters for numerals, as in the preceding part of the book. It is worth while comparing the last sentence of Part II. in the original edition (which part concludes the book) with the final sentence in Part II. of the enlarged edition, which is preparatory to Part III. immediately following. In the first instance, Semple says,—"Thus have I, to the utmost of my capacity, at length gone through the design I proposed, and which I have so much at heart; and if the ends I had in view shall be answered, and these sheets may in any wise conduce to the national welfare and instruction of young students in works of this nature, I shall be so far from regretting the labour I took in composing, and the expense I have been at in publishing them, that I shall sit down with all the self-complacency that arises from a consciousness of meaning well." To the table of contents accompanying the enlarged volume is added a list of the chapters and sections in Part III., and, of course, this is not to be found in the tables of contents of the original volume comprising but two parts, which is another proof that the enlarged edition is a *bonâ fide* one. We will now give a short summary or description of the contents of this rare Part III. Briefly described, it is "a plan for increasing the commercial and landed interests of Ireland; and briefly demonstrating that not only Great Britain but the whole British empire may gain mutual advantages thereby." There are three chapters in this part, and each of the chapters, like the original volume, is divided into a number of sections. Throughout these chapters the question of Free Trade, exports and imports, roads and their construction, the establishment of fairs and markets, the reclamation of land, the duties of surveyors and supervisors of works, and other kindred questions, are discussed. The last section of Part III. deals with the public utility of the plan proposed, demonstrating that not only Great Britain and Ireland, but also the whole British Empire, may gain mutual advantages thereby, illustrated by seven short conclusions drawn from the whole.

It would appear from the practical patriotic spirit manifested by George Semple in Part III., that he was moved to take up his pen again, stirred by events that led to the short-lived National Parliament of Ireland in 1782–1800. The architect and author of "Building in Water" certainly came out in Part III. of his work, both in the character of a public benefactor and social reformer as well as in that of an engineer and architect. He goes in for the construction of a grand road, dividing the country from north to south, from Londonderry to Cork, and another grand road from east to west, or from Dublin to Galway, with other connecting roads, and the establishing of a number of stated fairs or markets thereon, for the opening up of trade

As Semple never anticipated the railway system, he long bethought him of the best way of developing trade and manufacture, and hence his plans for improving the trade and wealth of the country by public works of magnitude, including road-making, drainage, and lifting hundreds of miserable creatures out of the then poor houses and transplanting them to remote parts of the country, where they might be taught some industrial employment, and made the nucleus of a future thriving colony of producers, instead of idlers and eaters of unearned bread.

Having furnished the reader with particulars of the enlarged edition of Semple's "Building in Water" we will proceed to give some account of the architect himself, his professional practice and architectural work. Hitherto, although a century is ending since the architect's death, no one has furnished us with a sketch of his life, and indeed materials for a biography are scant. The evidence to be found in his literary work, and odd waifs and strays to be unearthed in out-of-the-way channels, are the only materials that are accessible as far as our diligent investigations have revealed them. George Semple was born in the early years of the eighteenth century, but in what particular year we have not been yet able to trace. He was self-taught, for the whole of his time at school amounted to "six winter weeks" in his thirteenth year. Writing in 1775–6, when the first edition of his "Building in Water" appeared, he speaks in one of his chapters of his experience extending over a period of sixty years; and he also mentions his father being a building workman as far back as 1676. Semple informs us that from his childhood he had been well acquainted with the nature of lime and sand made into mortar of all sorts; and his opinion of good mortar and its properties is more than once stated in his volume. "Mortar made of pure and well-burned limestone, and properly made up with sharp, clean sand, free from any soft earth, loam, or mud, will, within some considerable time, actually petrify, and, as it were, turn to the consistence of a stone." Commencing life with a practical knowledge of building materials, and with a determination to use the best, he laid the foundation of his subsequent success in practice. Like many architects in the eighteenth century, Semple began life as a builder or contractor; and for the better part of his active life he combined both professions. In the earlier years of his practice, his works were confined to the designing or erection of private dwellings in the city and provinces in the sister kingdom. He appears also to have had some experience in the drainage of bogs in Ireland, which knowledge he afterwards turned to good use in his plans for erecting buildings and other structures in like soft foundations. In August, 1739, Semple set out on a business tour from Dublin, riding all the way, visiting Sir John Bingham's place in Castlebar, County Mayo, his route leading him to Frenchpark, in the County Rosscommon, and other places in the Province of Connaught. He has left us a short account of the dreary pictures and dismal scenes of poverty and wretchedness he witnessed among the peasantry at that period. In 1749 Dr. Sterne, Bishop of Clogher, bequeathed 1,000*l.* towards the erection of a spire to St. Patrick's Cathedral, Dublin; and this work, which is built of mountain granite, was executed some time afterwards from the design of Semple. This spire is 103 ft. high raised on the tower, which is 120 ft., making in all from the ground to the ball of the spire 223 ft. This ball was, in after-years, blown down or destroyed by lightning; and, if we remember aright, a ball and cross were set up a few years ago during the work of restoration, carried out by the munificence of the late Sir Benjamin Lee Guinness, bart., M.P. About the year 1751, when Semple was solicited by some public men in Dublin to give his opinion respecting the temporary repair of Essex Bridge, preparatory to its rebuilding, he was engaged by contract in building St. Patrick's Hospital, otherwise known as Swift's Hospital (commenced in 1749 and opened in 1757). He had also in hand two private houses for the Rev. Dr. Leigh, in Capel-street, Dublin, and one for Arthur Newburgh; a new mansion for the Archbishop of Dublin; and another for the noted Colonel Ram, of Ramsfort, Gorey, County Wexford. In the Irish rebellion of 1798 the insurgents destroyed the mansions of Ramsfort and Clonaton, the handsome seats of the Ram family, and other houses. When Semple began the temporary repair of Essex Bridge over the Liffey, there were two or three schemes lying before the Corporation of Dublin, one of which was to repair it with timber in five months for 500*l.*, and another with stone within six months for 800*l.* Semple gave it as his opinion that the temporary repair of the fallen pier or the broken arch could be accomplished with timber, in the space of ten days, at a cost not exceeding 100 guineas. After due examination and preparation, he accomplished the work in an efficient manner in the time he had, in the first instance, unpremeditatedly mentioned. Mr. Prior, a well-known public benefactor and practical patriot of the time, convinced of Semple's abilities, often visited him during the time he was carrying out the work of repair, and he in conjunction with some of the principal aldermen of the city, who were also constant visitors, urged Semple, when he was completing the repairs, to undertake the work of the rebuilding of Essex Bridge. After some slight show of hesitation, on account of his want of sufficient experience of bridge-building, or works constructed in water,—but at heart being really desirous of attempting works of the kind,—the architect consented to undertake the work suggested. He consulted his books, but the works of Alberti, Palladio, Scammozzi, Serlio, and others of the old architectural writers, were deficient in the information for supplying practical plans for laying foundations in deep or rapid rivers, although those authors supplied numerous designs. In the middle of the eighteenth century, modern architectural literature was in its infancy, and as Dublin libraries and booksellers could not furnish any useful book on the coveted subject, Semple settled his domestic affairs, and prepared for a visit to London. In the latter city he thought he was likely to secure books that would be useful to him. Arrived in London, he purchased about 40*l.* worth of books, plans, &c., which he ordered to be sent after him, and returned home himself within fourteen days. The deficiency of the ancient writers on bridge-building and other kindred works amazed Semple, though the perusal of their works afforded some hints which he turned to good account. After taking soundings and borings in several places in the river Liffey, preparing plans and making other preparations for the rebuilding of Essex Bridge *de novo*, seemingly insurmountable difficulties presented themselves to the mind of the architect. The providing or making of an inclosure or coffer-dam was one of the chief obstacles, for Semple had no previous knowledge of those appliances. Old Westminster Bridge, which was completed by Labeleye in 1750, appeared to Semple to be the one that came nearest to his model, and, with the exception of some particulars, he took it as a precedent. In the construction of the latter bridge, however, the Swiss engineer used caissons in laying the foundations. On the 20th of May, 1752, Semple again set off for London under three strong inducements:—(1) to find out the methods which were at that time in agitation for opening the streets in London and Westminster; (2) principally to consult his friends and procure advice for his intended enclosure or coffer-dam; and (3) to procure several appliances which he knew he would want both in his capacity of architect and contractor. In London he was industrious in seeking information anent street improvements, and procured the three Acts of Parliament passed at that period for the purpose. He was not so lucky in his second quest of procuring information concerning his intended inclosure for laying foundations in water. He called on Labeleye, the engineer, and laid his plan, soundings, and borings before him for the new Essex Bridge over the Liffey, but Labeleye freely told him that he did not by any means approve of laying foundations in coffer-dams, assuring the Dublin architect that it would not answer his purpose. At this time the pier and other works were being carried on at Ramsgate under Etridge and Preston, and as these gentlemen were more intimate friends, particularly the former, Semple posted off to Ramsgate to consult them. Etridge some time previously was sent over to Ireland to project a bridge for Coleraine, most likely instructed by the "Irish Society" of London, which still held large estates in that district. Etridge had also been employed by the Corporation of Dublin some time before to view the ruinous bridge and report upon it, which he did. From neither Etridge nor Preston, however, did Semple receive any encouragement for laying foundations in coffer-dams, as neither of those gentlemen had ever seen the method practised. The former concluded his advice by saying, "Take care that you do not find yourself mistaken," and the latter volunteered the friendly caution, "Above all things, take care that you do not spare timber." Before leaving Ramsgate, where he stayed two days, Preston favoured Semple with a rough copy of their plan. The latter afterwards expressed his surprise and wonder at seeing with what dexterity they handled large blocks of Portland stone, and with what ease and deliberation they laid them under the water at Ramsgate. Leaving the latter town, Semple posted away to take a cursory view of the coast as far as Dover. A harbour for the Downs was at the time the subject of some talk, and Semple's visit resulted several years afterwards in a plan for the construction of a harbour there, "projecting to 20 ft. low water, the highest strong tides supposed not to exceed twenty more." The details of Semple's harbour for the Downs are given in Part II. of his "Building in Water." Of course it was a speculative plan, taken from observations, and not based on soundings or borings, which he had no opportunity of carrying out during his flying visit to Ramsgate and Dover. On his return journey, from his second visit to London, Semple purchased several more books with the hope of finding some practical information in them concerning inclosures or cofferdams. On his way home he also purchased two chain pumps, three double screws, six jacks of different sizes, two dredging-machines, and several sorts of terras, and went, as he tells us himself, "to Leigh, near Warrington, to procure some Leigh lime (which, as I was informed, would set under water as well as terras), picked out a few labourers at Liverpool, and on the 23rd of June returned to Dublin." All the information obtained by Semple as the result of his visit to England was insufficient for his purpose; he was still in doubt about the construction of his favourite inclosure, and not one of the books he possessed afforded an idea of the construction of a coffer-dam. In the midst of his alternative hopes and anxieties he visited the bookshop of an old and wealthy Dublin bookseller, of the name of George Ewing, to look up more books, and accidentally hearing from the bookseller that a son of his was then on his travels, and at that time he believed in Paris, Semple earnestly pressed Ewing to write to his son to procure, regardless of expense, all the books, drafts, or plans that could afford him (Semple) any instructions for laying the foundation of a bridge about 25 ft. under high-water in a rapid river, and to forward them to Dublin with all expedition. The bookseller's son fortunately picked up in Paris the very work that suited Semple's needs. Colonel Belidor, the since well-known Bernard Forest Belidor, a Continental engineer of much celebrity in his day, had just published the fourth volume of his "Hydraulic Architecture." This work was forwarded to Semple, and the perspective view it contained of the men at work in a coffer-dam at a bridge then building at Orleans, instantly roused Semple's somewhat drooping spirits. The French language Semple did not understand, nor could easily, at that time, get translated, but in turning over the plates of Belidor's volume, they all appeared plain enough to him. Save what hints he got from Belidor's volumes in the matter of coffer-dams, a method which Semple from the first, under the name of an inclosure, had determined upon, the Dublin architect had to invent and contrive the numerous methods and appliances used in the progress of his work. He has left an interesting account, with details and plans, of the building of Essex Bridge, with a diary of each day's work, and incidents from the taking down of the old bridge on January 19th, 1753, till the completion and opening of the new bridge on the 8th of April, 1755, covering a space of two years and eight days from the time the public were deprived of the use of the former bridge. In building Essex Bridge, Semple kept faith with the public as nearly as possible, and only slightly exceeded his estimate and the time calculated. He promised the overseers, the Lord Justices, the committee of the Irish House of Commons, and the public, that he would build them a bridge that would stand as long as the mountain in the neighbourhood of Dublin, known as the "Sugar-loaf," that the expense should not exceed 20,500*l.*, and that he would also have a road opened for carriages over it within two years from the day of stopping up the old bridge. Considering the great difficulties that beset his path, and which are detailed in his "Diary," his work was signalised by great expedition. The cost amounted to 20,661*l.* odd, and half this cost was expended for works that

are under low water. Between Labeleye's Old Westminster Bridge and Semple's Essex Bridge there was a great analogy observable not only in their design, but in other matters constructional and historical, although the foundations of the former were caisson laid, and the latter cofferdam. From their high-water mark to the lowest bed of their masonry, the mean depth at Westminster Bridge was 23 ft., and at Essex Bridge, 21 ft. 6 in. The stones in Essex bore a proportion to those in Westminster Bridge, the proportion taken from the spans of their middle arches, which were to one another as three to five, their length being as one to four. The breadth of Old Westminster, from the extremities of the parapets, or plinths under the balustrade, was 44 ft., and at Essex Bridge it was 51 ft. Both bridges have given way to modern improvements, after a service of about 120 years. The former was replaced in 1862, and the latter quite recently. Semple's bridge, however, would have lasted hundreds of years longer, but it was too high, and had too bold a sweep for modern passenger and vehicular requirements. Its stable and firm foundations have, however, been utilised by the engineer of the Port and Docks Board of Dublin, in the New Essex, *i.e.*, Grattan Bridge, which has replaced it. Semple's boast, after all, is not unlikely to be realised in part, for the foundations of his bridge may yet last as long as the granite of Sugarloaf Mountain.

Besides the work mentioned already, Semple was also employed by the Corporation of the City about the same period in the examination and repair of old Ormond Bridge over the Liffey. While so engaged he took soundings and borings, and left for his successors a design and plan for its future reconstruction, details of which may be found in Part I. of his Treatise. His anticipation about the future of old Ormond Bridge, owing to its instability, were realised, for that bridge was carried away by a great flood in 1802. The ornamental design of the reconstructed bridge was by a Mr. Savage, an English artist, but the plans, soundings, and borings made many years before by Semple, were utilised. The providing of bridges over the rivers at Londonderry, Waterford, and Wexford, and other places occupied a good deal of Semple's attention from time to time, and he appears to have been consulted by the Corporation of the above cities and towns, for he prepared these plans personally, and prepared plans and reports for timber or composite bridges suitable for these localities, which he recommended to the consideration of the respective corporations. It is somewhat strange that Semple's name does not appear among the list of competing architects, English and Irish, to the number of sixty-one, who sent in designs for the erection of the Royal Exchange of Dublin in 1769. It is still possible, however, that his name may be hidden under one or other of the *noms de plume* that grace that list. The Guild of Merchants on that occasion showed a good example in paying 100*l.* for the best, 50*l.* for the second best, and 40*l.* for the third best design. Three English architects, James Gandon, Thomas Cooley, and Thomas Sandby, carried off the chief premiums, but some of the native architects whose designs were considered good were presented pieces of plate. Cooley, who received the highest premium, carried out that work and other large works in Dublin afterwards; he was succeeded by James Gandon, who, though English born, became *par excellence* the greatest Irish architect of his time. He lived on until 1822, when he was over four-score, having spent more than forty years of that time in Dublin, his predecessor, Cooley, dying in 1784, at the early age of forty-four. Semple commends the examples of the Guild of Merchants and of the Corporation of his day in giving premiums to architects for preparing designs for the Royal Exchange and the Blue Coat Hospital to other public bodies as worthy of imitation. Knowing, as he well did, the trouble and labour it costs architects to prepare designs, &c., which modern committees dishonestly ignore,—that is, they ignore the pains, but they utilise the labour without paying for it. "There is no doubt," writes Semple, in 1776, "but when Ormond Bridge has fallen down but they [the corporation and other bodies alluded to] will continue to exercise the same most useful generosity, and perhaps much enlarge those sums, as the nature of that extraordinary work, and the prescribing proper and effectual methods for laying the foundations require a great deal of labour, and justly merit a very liberal compensation." Semple was promised the Controllership of the works in connexion with canal navigation, projected in Ireland in his time, but by some underhand influence he was circumvented.

We have not much more to add. Although Semple designed and built many private houses and mansions throughout his career, he looked upon Essex Bridge with a pardonable degree of pride, and justly judged it as his most ambitious work, and his contemporaries and successors were of the same opinion. His brother John appears to have been associated with him in his bridge-building and other works, for he mentions his name more than once in connexion. When George Semple published his "Building in Water" in 1776 he had for some years retired from the active duties of his profession, but his mind was active still in devising projects, as may be instanced in Part III. of his work, alluded to in the earlier part of our sketch, and which addition he made to his treatise some years after its first publication. We have not been able to trace the exact date of the architect's death; but as near as we can approximate he died some time early in the last twenty years of the last century at an advanced age. Had the architect lived, and his health permitted him, it was his intention to have added another part on kindred subjects to his "Building in Water." His treatise, as a whole, is both useful and interesting, and contains numerous hints on building matters, materials, and contrivances that can be well utilised by architects, engineers, and building workmen in the present day. From the centring of a small bridge to the construction of a large harbour or lighthouse, in the framing of timbers, the piling for foundations, in masonry and mortar, and in many other operations, there is much information and honest advice for the execution of sound and lasting building work in and out of water.

Since this article was in type, the writer has seen in the library of the Royal Institute of British Architects a copy of the second edition of Semple's book, and a reference thereto has shown the writer that it is a perfect copy, and a London edition. It was "Printed for the author, and sold by T. Longman, No. 39, Paternoster-row; J. Almon, No. 178, Piccadilly; and I. Taylor, opposite Great Turnstile, Holborn. MDCCLXXX." In view of this announcement a slight alteration of the writer's text would appear to be necessary; nevertheless he is inclined to exclaim, *Scripta manet!*—what is written is written,—and let it remain. What has been stated after all only goes to prove the rarity of the second edition of Semple's book, and the difficulty often entailed upon a public writer in hunting up a copy of a work not generally known. Further, it may be stated that an advertisement inserted in the public press, added to other inquiries instituted by the writer, failed to elicit the fact of the existence of a second edition. As a matter of justice, the writer wishes to be allowed to state here that the well-known "Essay on Concrete," written in 1836, for which the medal of the Institute was awarded, points out the fact that Semple was one of the first of modern architects to suggest foundations by concretion.

ARCHITECTS' ASSISTANTS.

SIR,—Will you kindly allow me space in your columns to suggest that it appears to me, and doubtless to many, a remarkable fact that no benevolent society has been formed in connexion with the large class of architectural assistants and draughtsmen?

The builders' foremen and clerks of works, law clerks, artisans of all descriptions, and most professions, have their respective institutions; but, unless I am much mistaken, none exists for the class to which I have referred.

Surely it is time that an institution of the sort were formed, and if you, sir, would add this to the many good causes you have so ably advocated, and other gentlemen of position and influence would give their countenance and assistance to a scheme, no doubt in a short time it might become a *fait accompli*. Within scope of its operations might be included land and quantity surveyors', also civil engineers' assistants.

Professional assistants, as a rule, are not too highly paid, and have little opportunity of providing for a time of adversity. It is not within my purpose to propose any details of a scheme. I will, therefore, trespass no longer on your valuable space, hoping that this letter may not be without its good results. BIENFAISANCE.

MIDDLE-CLASS HOUSES IN CENTRAL LONDON AND PARIS.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

AT the ordinary general meeting of this Institute, on Monday evening last, Mr. Charles Barry, president, in the chair, thirty-nine noblemen and gentlemen of eminence in art and science were balloted for and duly elected as Honorary Associates. (Their names have already been given by us in recent reports of the Institute's proceedings.) The following were proposed for election as Honorary Associates, viz.,—the Hon. C. Gore, Rev. C. B. Scott, Lieut.-Col. Lennox Prendergast, Sir John Gilbert, R.A., Rear-Admiral Count Gleichen, the Right Hon. W. Cowper-Temple, Mr. Edward G. Webb, C.E., the Very Rev. the Dean of St. Paul's, and Mr. Solomon A. Hart, R.A.

The following gentlemen were balloted for and duly elected as Fellows, viz.,—Messrs. Thomas Blashill, John T. Christopher, Edmund B. Ferrey, Horace Gundry, George Legg, and Alfred Norman. As Associates: Messrs. W. F. Hammond, E. B. J. Knox, A. G. Northover, G. Robson, R. St. A. Roumieu, and W. Scott.

Mr. Frederic Ouvry, F.S.A., was elected by acclamation an Hon. Fellow of the Institute, and, in recognition of his past services as Hon. Solicitor to the Institute, the meeting authorised the suspension of Bye-law 34, in conformity with the wishes of the Council, and in order to remit in this case the payment of the usual contributions. Mr. Ouvry, who was introduced by Mr. Hansard, expressed his appreciation of the honour done him, and said it was far in excess of what he deserved for the slight services which he had been able to render the Institute.

The President called attention to a very beautiful collection of drawings illustrative of Japanese architecture made by Mr. Conder, a recent Soane Medallist of the Institute, and now professor of architecture in Japan.

The discussion on Mr. W. H. White's paper on "Middle Class Houses in Central London and Paris" was then commenced.

Mr. Arthur Cates said Mr. White appeared to have almost exhausted the subject. He had put forward his ideas very clearly and lucidly, and had backed up his theory with very much practical experience,—experience gained not only in this metropolis, but in Paris. It was to be regretted that London, which was the metropolis of a vast empire, should, from what he (Mr. Cates) would venture to call the prejudices and the mistaken ideas of those who should be its inhabitants, have fallen almost into decay at its centre, that its heart should have become cankered, and that it should present to the eye of the stranger a sombre and woe-begone appearance, miserable in the extreme. This arose from the delusion which had become almost a portion of the Londoner's creed,—that health could be secured most certainly by sleeping nightly in what he called the country, in what was, in fact, a small, ill-built, ill-ventilated, and ill-drained box, but which he called his "suburban villa," planted upon ill-drained land, and surrounded by remnants of decaying vegetation. In order to pass to and fro between his suburban villa and business, he underwent the toil and anxiety of rushing to a railway station more or less distant from his house or his office, twice daily, and in the course of transit probably shut himself up in the foul atmosphere of a smoking carriage. This sort of thing was a great delusion, but it had been encouraged by the fact that, from circumstances which it would be difficult indeed to trace, it was impossible for him to find, within a reasonable distance of his employment, any residence which he could fairly inhabit. Mr. White had proposed a plan by means of which a person could have, within easy reach of his place of business, an excellent residence. By the adoption of Mr. White's proposals, the constant stretching-out of the metropolis until it became altogether unwieldy would be checked, and the labour and expense involved in municipal government, formation of roads, drains, sewers, and their maintenance, besides that of water-supply and gas, would be largely saved. Let any one take a map of Paris as it was twenty-two or twenty-three years ago, and compare it with a map of Paris as it is; and having done that let him compare London as it is with what it was at the same distance of time. In the interval, Paris had been almost entirely reconstructed, and had become the most beautiful and wealthy centre in Europe; notwithstanding that it had undergone troubles which

we in London had happily escaped, it was still as fair and as smiling as ever. What had enabled the wise municipality to carry out these vast improvements? Simply because the *maison à loyer* had kept the wealthy population in the centre of the city, and had permitted of reconstruction on an architectural scale. If buildings such as had been described by Mr. White became common in London, they would do much towards extinguishing the pestilential class of speculating builders, who ran up houses which were a disgrace, not only to their builders, but to the state which permitted their erection. Buildings such as had been described by Mr. White must of necessity be substantially erected, and with sounder construction there would grow up an improved taste in the architecture of London residences, as had been the case in commercial buildings. Mr. White, in his description of the "island" or block of houses in Regent-street,—an example which he had selected and dealt with with very great skill,—had attributed all the evils attaching to the conglomeration of houses and premises of which it was made up to the owner of the greater part of the property, viz., the Crown. The other great landlords whose policy in dealing with their property Mr. White had criticised were able to speak for themselves, but the Crown, being an impersonal owner, could not speak for itself, and therefore he (Mr. Cates) would say a word on its behalf. He would ask Mr. White whether he had the slightest idea of what the Crown had done for the improvement of London, and what the West End especially would now be but for the revenues which the Crown had lavished upon public street improvements? Look at Regent-street, which occupied ground formerly covered with a congeries of mean, narrow, and tortuous streets. Pall-mall East, Cockspur-street, King William-street (Strand), and other streets in the neighbourhood, were all formed by the Crown out of its own revenues, and if the people who built the houses which now line those streets had been inspired with one-tenth of the public-spirited liberality with which the Crown was inspired when it made those improvements, Mr. White would not have reason to complain. The enlightened way in which the Crown had set about these improvements was in marked contrast to the parsimonious manner in which they would be proceeded with now by the Metropolitan Board of Works. To make a new street between two given points, the Board would carry it as far as possible along the line of existing streets, no matter how squalid, and would allow one side of such streets to remain standing. This course of procedure prevented the formation of anything like straight or properly laid-out streets, and the squalor and ruin attaching to new thoroughfares so made hung about them for years, and consequently it was difficult to get the unoccupied ground taken for building purposes. Such streets were made without the slightest regard to effect or magnificence, and seemed to be regarded merely as cab-roads which would save a few minutes in getting from one point to another. Such was the method of procedure which the local self-government of the metropolis thought best befitted its dignity when it proposed to open up new lines of thoroughfare. Mr. White must have been misinformed, or rather uninformed, as to the management of Crown property, and his strictures were not merited. The managers of the Crown estates in London had but one anxiety, and that was to promote the well-being of their estates and of the metropolis at large; and as regarded the particular "island" or block in question, if Mr. White had a client who was prepared to say he would arrange for the surrender of all outstanding interests in that or any other Crown property, the Crown would negotiate with him and grant him a lease of the property for the erection of such buildings as he had described. The fact was it was not the Crown nor the wealthy noblemen who owned so great a part of London who stood in the way of such improvements as had been advocated; they were powerless to prevent people dealing with leasehold interests by making marriage settlements and otherwise tying up and entailing their property so as to render it impossible to deal with it. The Crown and the other great landowners regretted this, but they could not help it.

Mr. Whichcord said he believed the subject dealt with in Mr. White's paper was one which was fast coming to the front, and sooner or later architects would be called upon to erect in the central parts of London houses in flats rather than the ordinary self-contained dwelling-houses.

Mr. Hansard thought Mr. White's plans, especially the one for the reconstruction of the island in Regent-street, very misleading. There were nineteen houses in that block, held on leases which had something like forty years to run. To purchase all existing interests, to obtain a renewal of the leases, and to erect a building such as Mr. White had described, would absorb 500,000*l.* at the least.

Mr. Street asked at what price per cubic foot Mr. Hansard calculated the cost of the building?

Mr. Hansard: You may calculate it at any price you like.

Mr. Hebb said that a builder of large experience had told him that such buildings as were proposed by Mr. White could not be built so as to let for less than 30*l.* per room per annum. If that were the case, people of moderate means could never afford to locate themselves in such houses. Much had been said to the detriment of the speculating builder, but he had at any rate taught architects how to build cheaply—("And nastily")—and he defied any architect to build the same kind of houses—("We don't want to")—as were built by speculating builders at anything like the same cost.

Mr. Dawson thought that, admirable as Mr. White's plans were, they adhered too closely to the Parisian model, and therefore they were to a certain extent unsuited to the requirements of English households. The domestic offices were decidedly wanting in completeness, and such scant accommodation as Mr. White had provided would not be tolerated by householders. In his, (Mr. Dawson's) opinion, it would be necessary to devote at least 25 per cent. more space to the area of each dwelling.

Mr. C. F. Hayward pointed out that Mr. Hansard was mistaken in assuming that Mr. White proposed to purchase such costly property as had been mentioned,—to acquire unexpired leases, and to compensate tradesmen for loss of business and removal,—with the view of erecting on its site dwellings in flats such as he had described. Of course it was obvious that such a mode of procedure would never pay. Mr. White had merely instanced a particular "island" or block as an example of what might be gained in residential accommodation, architectural *ensemble*, and money value, by the adoption of his plans on a given site, as compared with what was obtained by the ordinary mode of building shops and houses with narrow frontages and superposed rooms. He thought one objection to the numerous carriage entrances to the courtyards of such houses as had been proposed was that they would very much cut up the pavement, and that they would add to the danger, already sufficiently great, of passengers being run over.

The President, in closing the discussion, said there could be no doubt as to the ability and interest of Mr. White's paper; but he (the President) had come to the conclusion that, although there were in London a large number of bachelors and people with no families, to whom such dwellings as the Parisian houses in flats which had been described would be very acceptable, it would be difficult for the generality of Englishmen to imagine anything more miserable and uncomfortable. He agreed with what had been said by Mr. Dawson as to the inadequacy of the domestic offices. Mr. White not only wanted to revolutionise our houses, but our instincts and habits and modes of life. As far as his (the President's) experience went (he had not had any experience of Paris, it was true), in Turin and Vienna he had found people crying out, "Give us an English house for comfort." Perhaps, after all, the whole of what might be said on the subject could be summed up by saying that people were all more or less discontented with what they had, and were apt to consider that other people's possessions were better than their own.

Mr. White, in replying on the discussion, said he was very much obliged to the members for the vote of thanks they had accorded to him at the last meeting, and for the evident attention they had given to his paper. Some of the objections which had been raised to his proposals had already been answered, and he was particularly indebted to Mr. Hayward for having replied to the remarks made by Mr. Hansard. He (Mr. White) never wished to be understood as bringing forward model plans for houses in "flats"; he simply wished to show that in Central London houses as they might be would be much more remunerative than houses as they were. Nothing helped the cause of reform more than intelligent opposition, but nothing was more dangerous than that opposition which sprang from misconception or perversion,—he would not say wilful perversion,—of a reformer's arguments. Let them imagine a meeting of barristers, with a learned judge in the chair, to consider the amount of crime supposed to be prevalent in a particular locality of Central London. Say that at that meeting one of the barristers rose and made a suggestion which, if carried out, would extirpate from that particular locality murder, robbery, and rape; and suppose that on that suggestion being made, the learned judge interposed with "My learned friend has made a very good suggestion, but one which, if carried out, would seriously affect our national habits," it might be justly implied that our "national habits" partly consisted in murder, robbery, and the "other thing." Yet, when he (Mr. White) pointed out the other night that in certain parts of London there were houses in which whole families and groups of individuals were living in a state of higgledy-piggledy confusion, without any possibility of observing the ordinary privacy of family life, the President said or implied that the family life of this country was menaced by the suggested reform. Was it to be inferred, then, that the typical lodging-house of Central London represented English family life? It had been arrogantly vaunted that an Englishman's house was his castle; so it was in those admirable castles of Grosvenor, Bedford, Russell, and Portman squares, and even in parts of Belgravia. Could, however, the same boast be made by the denizens of the lodging-houses of Central London? But in Paris the boast, if it were made, would be a justifiable one. According to the Parisian plan, people might still live in Central London, each family having its own "castle," with a portcullis on the landing. It had been said that it would be far better to have a house in the suburbs for 50*l.* a year than a "flat" in Covent-garden for 60*l.* or 70*l.* a year, but those who argued in that manner forgot how foolish it would be to plan "flats" in Central London for people who preferred to live in the suburbs. Houses in flats were not intended for people who wished or could afford to have large houses in the suburbs. It astonished him to know that there were families in Paris who were willing to pay 1,000*l.* per annum for a few rooms on a boulevard, when for a tenth part of that sum they could have an entire house and a garden at Courbevoie or Vincennes; when for a twentieth part of that sum they could have perhaps a small château at fifty miles from Paris. But ever since the world had formed itself into communities, the heart of a capital city had been deemed by many men to contain all that made life worth living,—all the wit of one sex and all the beauty of the other. It had been explained to him,—not quite privately, and by no ordinary person, for it was Mr. Hansard,—that an insuperable bar existed to oppose the success of a scientifically-planned lodging-house; that such a bar lay in the vices of middle-aged celibacy and the often erratic domesticity of youth; that in houses such as he (Mr. White) suggested the young couple would be prematurely annoyed by the cries of the unwholesome family that always had measles in June and hooping-cough in November. But in the lodging-houses of Central London the middle-aged "celibat," the erratic youth, the young couple, and the unwholesome family, not only met upon a common stair daily and hourly, but their very rooms were dovetailed into each other. Since his paper had appeared, two well-known architects had told him that the buildings of which he had furnished illustrative plans were not high enough, which was perfectly true, for he had only sought to show that, block for block, the horizontal or "flat" system of planning was capable of utilising a given amount of cubical space far more economically and conveniently than the vertical system. Make the blocks the height of a Paris house, 66 ft. from pavement to cornice, and the result would be, in the case of his Regent-street plans, forty-five shops and houses, instead of the twenty shops and houses that actually existed. It was no sweeping reform that he proposed,—it was simply development. He had been called a revolutionist, and he had heard some one in the background call him a "radical." But to have the reputation of being a radical was to lose in the esteem of all that numerous tribe of dulness which sub-

sisted upon the prejudices of one-half of the community and the abuses of the other. The question, for the moment, was more a political than an artistic one. Once settle the politics of it, and the artistic part would be immediately successful. That the question would be settled was certain,—perhaps within the next fifty years,—but, before it could be settled, it would be necessary to reform the law of leasehold tenure, to cut off the custom of entail, and, as it had already been urged, to make real laws relating to light and air. Although he could hardly go so far as a certain Chief Commissioner of Works, who expressed a desire to

"Let laws and learning, arts and commerce, die,"

he sincerely trusted that Providence would

"Leave us still our old nobility,"

more particularly because he firmly believed that upon some of our "old nobility," and not upon architects and builders alone, depended the improvement of architecture in Central London; upon them, and not upon architects or builders, depended the improvement of many thousands of homes in Central London. But before such reforms could be effected, some amelioration of present evils was possible if the ground landlords of Central London would consent to study their own particular interests, to put money into their own pockets by laying out their land upon a scientific plan. Mr. White concluded by asking permission to add that the ground landlords did not put money in their pockets or study their particular interests when they drove hard bargains, when they extorted short leases, or when, as they sometimes did, they obstructed, at every turn, the march of public improvement.

The discussion on Mr. White's paper not having closed until five minutes to ten, it was decided, after some discussion, to postpone the reading of Mr. Neale's paper on St. Alban's Abbey to some future date, to be fixed by the Council.

SOCIETY OF PAINTERS IN WATER-COLOURS.

THERE is nothing in particular to distinguish the sixteenth winter exhibition of sketches and studies from many of its predecessors. The good things are mostly by the old names, and much in the style we have been accustomed to. Sir John Gilbert has one or two admirable landscape studies, at least studies in which landscape is the predominant interest, and exhibits the small study for his fine, though rather theatrical picture of "Wolsey," which was in the last Academy Exhibition. Mr. Naftel has a remarkably fine little sketch in North Wales (74): the hill which fills up the background shows a notable success in giving size and perspective, making us realise the scale of the landscape; and Mr. A. Goodwin's small drawing called "The Earth taking Refreshment" (119), is a sketch which is very original and intense in its effect; his other drawings seem not equal to what he sometimes contributes. Mr. Boyce is in force with studies of old buildings at Ludlow and elsewhere, as he only can do them; and also contributes an elaborate and fine study of the interior of Edward the Confessor's Chapel at Westminster Abbey (110), on a larger scale than is usual with him. Mr. Walter Duncan, to whom we looked as one who promised something of the poetry of figure-painting,—something more than realism, — seems to be rather keeping his hand in than aiming at anything serious, but his figure of a lady, called "The Sonnet" (71), has much feeling, besides a very delicate harmony of colour, and his two old men who represent "Force and Finesse" (265) are highly characteristic. In a lighter way the capital study of a girl holding a bit of blue china and looking upward, with the title "Where shall it go?" (305), is worth attention. Mr. J. D. Watson sends several very suggestive drawings of landscape with mostly a single figure in each, which he has left without any special title, so that we may make our own story for them: in two of them (133 and 195) there is much beauty of tone and feeling in the landscape; No. 148 is a good study for Don Quixote and Sancho, obviously, though not so named. Animal sketches are rather strong in the exhibition: Mr. F. Tayler's "A Favourite Hunter" (16), and Mr. Brittan Willis's "Sketch of a Short-horn Bull" and "Slight Sketch of a Grey Cart-horse" (222, 235), are very interesting studies of what may be called animal character, the last-named especially; and Mr. Otto Weber's animal pictures are, as usual, excellent, with the added pleasure of good landscape. Among the figures of young women which abound, and which are mostly but commonplace, Mr. Johnson's "Summer" (288), a very fine young woman with light dress and black hair, seated in the shade, has more force and feeling than most of his contributions. The figure called "Caught!" (213) is a puzzle: who or what is "caught" is not very apparent, but the lady has her hand in her hair, and we involuntarily recall a certain poem by Burns.

Mr. Buckman is trying, we fear, to carry "decorative treatment of modern subjects" too far in "A Pastoral" (114); figures and foliage may be treated decoratively, but landscape cannot possibly be subjected to this form of treatment: it is in that case neither one thing nor another. His other study, "In the Country" (314), a young lady, in a *négligé* costume, seen against a background of foliage, is very graceful and very successful. Among the small things on the screens, which are generally among the best in the room, are some beautiful sketches of landscape effects by Mr. F. Powell,—things equally tender and true in feeling; two little drawings by Mrs. Allingham, "At the Sea, Eastbourne" and "On the Shingle, Eastbourne" (369, 406), studies of children, and also of shingle, the beautiful-toned large pebbles being depicted in the latter drawing in a way to make one love them. Mr. Lamont's study for the "Laird of Cockpen" (444) is clever; so are "On the Turf Moss" (453), by Mr. Clarence Whaite, and "On the Sands at Instow" (458), by Mr. Brittan Willis; and there are three small drawings by Mr. Alfred Hunt, of which "Pont-y-Garth" (443) is perhaps the finest. A single contribution by Mr. Tadema, "Flora" (394), shows a classic maiden stooping to gather flowers, her face nearly hidden, and her head and shoulders foreshortened, in a garden or meadow, with a fountain and statues in the distance.

SUSPENSION OF NOTICE TO REPAIR.

IT is very often much better that those who are not lawyers should not take any heed of the decisions of the courts of law, for the purposes of their own transactions, without first consulting those whose business in life it is to keep themselves abreast of any change in any particular branch of law. For it may be that a decision which is relied on, unless given by a court of very high authority, is in a short time overruled, a fact which may be unknown to the non-legal reader. Or, it may be that without comparing it with other decisions, to explain or curtail it, this decision is not applicable to many cases which at first sight it might seem to affect. But a decision of the House of Lords,—when it is one which interests either the general public or a particular class of persons,—deserves some comment, and should not be lightly passed by. The rule which has been formed by the decision of this high tribunal in the case of Hughes *v.* The Metropolitan Railway Company is thus fairly entitled to consideration, and may be thus laid down. Where there is a covenant to repair upon notice, and the conduct of the persons by whom notice is given is such as to lead the person to whom notice is given honestly to suppose that such notice is temporarily suspended, whereas it is not the intention of the person entitled to give notice so to suspend it; then the latter will not be allowed to take advantage of the penalties in such covenant. We have, it will be observed, confined this definition to the case of a covenant to repair, though the principle of the decision is certainly applicable to other covenants; but it will be safer to confine ourselves to this class of covenants, especially as it is that which is of most importance to the readers of the *Builder*. But we must also point out that the person to whom notice is given must honestly and *bonâ fide* believe in the suspension, for otherwise he will not be relieved from acts caused not by mistake, but by intention. Neither does it make any difference whether the person giving the notice behaved honestly or dishonestly, so long as the person to whom notice is given is by the conduct of the former lulled into a false security, though fraud, it is scarcely necessary to observe, would constitute another ground of action. We will, with these prefatory remarks, take, as an example of this rule, the facts in the case before us, upon which, as we have said, the House of Lords have adjudicated. The plaintiff was the owner of the freehold (we leave out the steps in the transmission of the property), a certain person, whom we will call A. B., is the lessee, and the Metropolitan Railway Company were sub-lessees. The lease, and also the under-lease to the railway company contained a general covenant to repair, and a covenant to repair within six months after notice, and also a proviso for re-entry. On the 22nd of October, 1874, the plaintiff caused a notice to repair to be left with the first lessee, stating that the repairs were to be done within the ageed six months. On the 28th of November the solicitors of the Company wrote to the plaintiff, stating that as the Company's interest would shortly expire, the freeholder might be desirous of obtaining possession of that interest at once, and adding, "and so we propose to defer commencing the repairs until we hear from you as to this arrangement." We need not travel over many more facts, for this letter was the commencement of negotiations which continued until the 31st of December, when they came to an end. Consequently, about the middle of the following April the Company set to work at the repairs of the buildings, which were completed about the end of June, that is, more than six months after the notice to repair had been given. Consequently also the plaintiff brought an action for breach of the covenant to repair. The action itself was fought out with the varying fortune which attends so often a struggle in the law courts between two wealthy litigants over an important legal point. But after two adverse decisions in the Courts below the House of Lords decided in favour of the Company, on the ground that during the time when negotiations were in progress the notice to repair was temporarily suspended, so that that period should not be counted against the tenant; consequently the notice actually began to run from the 31st of December. Thus, in point of fact, the repairs were completed within six months after notice had been given. It is obvious, therefore, that a very important principle is thus formulated, the only difficulty in regard to which is its application. Because, it must be remembered, the circumstances must be such as would induce a person reasonably to think that the notice is suspended. If they were such that a man of ordinary prudence would not regard them as temporarily waiving the notice, it is obvious that in such a case a court of law will not relieve a person against the consequences of his own stupidity or carelessness, so that it is necessary that this decision should not be counted on as being capable of altogether universal application. Still, in many ordinary transactions between landlord and tenant it may have important consequences. Thus the tenant, after such a notice as regards painting, for example, might enter into negotiation with the landlord that he should bear part of the expense, and the landlord might for a time entertain the proposal. On the principle enunciated in the case upon which we have based these remarks, such negotiations might reasonably lead to the idea in the mind of the tenant that the notice was during such period suspended, for there would have been the unintentional "misleading," which is the foundation of the reasons for the interference of the Court. It will be observed, that we have used the word "suspension" in place of "waiver," because this latter term points to a total withdrawal of notice, not to a temporary suspension; but these are legal points of too great minuteness to be dwelt on longer. What we have desired to do in these remarks has been to show clearly the principles which for the first time in regard to this subject have been concisely and plainly laid down by the highest Court of Judicature in Great Britain, and which may have important consequences on the ordinary relations of many classes of the community.

Swans on the Thames. — Mr. E. C. Robins, architect, in his report as "swan warden" of the Dyers' Company for the current year, states that an interview was had with the Lord Chamberlain with regard to the objections of some of the residents and anglers on the banks of the Thames that the swans ate fish and spawn, and it was satisfactorily proved by the analysis of Mr. F. Buckland that the outcry was much exaggerated. The birds do not eat the fish or spawn by preference, but only incidentally whilst feeding upon the vegetable matters with which the river abounds. However, the Crown has decided not to increase the number of swans, but to maintain the total of grown birds and cygnets at about 400; those of the Dyers' Company at 65, and the Vintners' at 45, which was the average of the last seven years.

THE HOSPITAL FOR INFECTIOUS DISEASES COMPETITION AT MAIDENHEAD.

As we mentioned in our last, there has been a competition for a new hospital for infectious diseases at Maidenhead, which has resulted in the corporation of that town awarding the first premium of 10*l.* (and therefore presumably the task of carrying out the building) to the author of the design signed "Ad Rem," and a second premium of 5*l.* to that signed "Serio." The drawings were exhibited on Monday last in the Town-hall at Maidenhead.

The affair turns out to be a very small one: a hospital has been required to accommodate eight patients, four male and four female, for which the sum of 800*l.* has been allowed as a limit of cost. This seems too small for securing any really adequate building affording proper accommodation. But granting that the building can be provided in a proper manner for that sum, a glance at the two selected designs shows at once that this is not likely to be the case, so far as the matter has yet gone; and that, meagre as is the sum allowed to provide such a building, the Council have made either an utter blunder or something worse in their selection.

It is not usual for us to go out of our way to notice specially a competition on so small a scale as this; and the general quality of the designs, though they are painfully numerous, considering the premium offered, is not such as to call for any remark, except in regard to the gross ignorance or neglect of the conditions of hospital building which many of them show, in addition to the usual ignoring of the question of cost which generally meets us in a competition. But when we find that the selected design, by, we are informed, a local architect, is one of those which shows this ignorance or thoughtlessness, we decline to consider the matter as a trivial one. Small as is the building to be erected, its right or wrong construction is really and practically a matter of life or death. A style of proceeding which, in the case of a competition for some other classes of building, might be regarded rather as a question of fairness to other competitors than in any more serious light, assumes really a grave moral aspect when it concerns a building intended as a sanatorium, as a means of checking and curing virulent disease.

It is our bounden duty, therefore, to take the initiative, and to point out at once that the design selected by the council of Maidenhead is utterly unfitted for its purpose, and ignores principles which, first urged in this journal, have been long accepted as essential by all who have given their attention to the subject of hospital building. It is essential that the wards in which patients are lodged (in the case of infectious diseases more especially) should be kept as separate as possible from each other and from the main building; should have as much free air space as possible all round, and a thorough cross ventilation; and that all water-closets should be separate also from immediate communication with the main portion of the interior. All these conditions are utterly ignored in the selected design. The plan in any case is that of a man who is no planner; there is no system about it. But its positive defects are more serious. The wards have windows only on one side. The waterclosets open on to an interior passage in the centre of the building, upon which all the other rooms also open (there is a pretence of a vestibule between the actual closet and the passage, but that merely means a little longer space for effluvia to traverse); and they cannot be reached from the wards but by coming out into this passage; and the rooms for stores are close adjoining these closets. There is a "happy family" appearance in the plan, as if the direct object in an hospital were to bring all its inmates and all its departments into as close a union as possible, instead of the contrary. It is extraordinary that a plan should have been sent in so utterly ignoring the true conditions of the problem as this does: we wish we could add that it is extraordinary that this plan should have been selected.

The comparison of this plan with the one to which the second premium has been awarded affords some explanation of the motive with which the first design has been selected, but an explanation which makes matters no better. For the plan marked "Serio" is, as far as we were able to judge in a short inspection, the best that has been sent; at all events, it is without question one of the best, and, though open to some objections, is obviously the plan of a man who has considered and understands the subject to some extent. The author keeps the two wards as wings separate in great measure from each other and from the central block of offices, with which they are only connected by small rooms for nurses (with an outlook window on the ward in each case); and the water-closets and lavatory are connected with each ward, in such a way as to give privacy, and at the same time provide a stratum of complete cross-ventilation between them and the wards: they are connected with no other part of the building whatever. The author would have done better had he planned his wards so as to have windows *opposite* to each other instead of at cross corners; indeed, we must put it more strongly, and say that opposite windows are an absolute necessity, for where there is only cross corner ventilation the opposite corner is almost certain to become a receptacle for contaminated air which cannot be got rid of. We must say also that there is one point in the "Ad Rem" design which "Serio" has not, and would be the better for, viz., a separate ward for a convalescent patient. But in the main the plan of "Serio" is a good one, and in every respect superior to "Ad Rem" and to most others in the room; and the council appear to know that it is a good one, since they have given it the second premium. They have not, therefore, the shield of ignorance for their action in the matter. Nor can it be a question of cost, since "Ad Rem" in reality goes beyond the stipulated cost in adding a sum for his mortuary, which mortuary is a necessary part of the scheme, and therefore the author is in reality out of court for transgressing the stipulated sum. It is true that the other design *looks* more expensive, partly because it is better drawn. The real test, however, would be whether the author of "Serio" can find a contractor willing to pledge himself to carry out the building for 800*l.*; he professes to be within the amount, while his favoured opponent admittedly exceeds it. The matter cannot, therefore, whatever the Council may pretend, be a question of cost. The architect of the chosen design makes a strange statement in his report; he says the cubic space of air per bed is something over a thousand feet in one room, and a considerably smaller space in the other room, and sums up,—"thus *giving an average* of 945 cubic feet per bed." We suppose that on the same principle, if the man who lived at No. 1 in a street had five meals a day, and the poor fellow in No. 2 had only one, Mr. "Ad Rem" would say there was an average of three meals a day between them, and No. 2 had no right to complain.

The matter is one to which, as we observed, we should hardly have given this space had it been a mere ordinary specimen of unfair treatment of competitors, because, though the unfairness, even in that light, is striking, the interests at stake to the architect are but small. But when the building to be erected is a hospital, which will be useful or pernicious in its effects in proportion as it is rightly or wrongly planned, it is our duty to interfere. We do not care who is employed to erect it, so long as it is properly done. We do not necessarily recommend the plan marked "Serio,"—could not, in fact, do so *sans phrase*, unless some modifications were made in it. But we tell the corporation of Maidenhead that if, in the face of what is now known about the necessary conditions of success in the sanitary operation of hospitals, they erect the building on the plan to which they have chosen to give the premium, they will run a very serious risk.

TOUTING VALUERS.

An eminent solicitor writes:—"Don't you think the system of surveyors touting for compensation cases should be exposed?

I inclose some notices sent to clients of ours, who have property in the new line of street about to be made through Soho. Such notices would not be allowed in our profession. The unwary are soon caught, and go to surveyors and solicitors who are not in their confidence."

We have received a perfect shower of letters inclosing applications made by some four or five valuers mostly unknown in the profession; one of them who uses the same name as an important officer of the Board of Works claims to have "great facilities for ensuring a favourable settlement of such claims." All we can do is to advise claimants to make inquiries before appointing any one to act for them.

NEW BATHS AND WASH-HOUSES FOR ST. PANCRAS: TOTTENHAM COURT-ROAD.

The building was commenced in March, 1877. The foundation-stone was laid on May 8th by Mr. Churchwarden Thornton. The contractors have undertaken to complete the works by the end of the year, and there is no doubt the building will be opened early in the coming season.

The site is the old Fitzroy Market, and is rectangular, being 109 ft. by 105 ft. The building is completely detached. The west front shown in our illustration is in Whitfield-street, and is the most important in some respects. The north, east, and south sides overlook the narrow old Market-street.

The principal entrance for bathers is from Tottenham Court-road, through Fitzroy-court, which is opposite the eastern portico of the baths. The latter consists of a Portland stone colonnade, supporting seven horse-shoe arches and a deep-trussed cornice. The swimming-baths occupy the north and south frontages. The Whitfield-street front contains the residences of the superintendent and engineer, the board-room, the public wash-house, and the ironing-room and the boiler-house.

The material of the facing is red brick. The mullions and tracery of the windows are stone, and the strings and ornaments are in Portland cement. Inlaid encaustic tiles will be used in the cornice and window labels.

The accommodation provided in the new establishment will be gentlemen's swimming-bath, 90 ft. by 28 ft.; second-class swimming-bath, 55 ft. by 24 ft.; 109 private baths. The public wash-house will contain accommodation for seventy-eight women. The style adopted is Moorish.

The interior of the large swimming-bath will be decorated in the style of the building. One of the principal features is a pendentive dome, which is being executed by Messrs. Dennett, in whose material the whole of the ceilings are also to be constructed.

The Commissioners have accepted contracts to the amount of 25,300*l.* Messrs. Kirk & Randall are the builders; the whole of the engineers' fittings are by Messrs. Fraser Bros.; the porcelain baths and glazed tile work by Mr. J. Finch; and the Portland cement dressings are in the hands of Mr. J. Stride.

Mr. Gundry is the architect, and Mr. G. Garratt clerk of works.

The plan of the building is to a great extent studied from the establishment in King-street. The Commissioners have adopted every suggestion that has been made with a view to economy in the consumption of fuel.

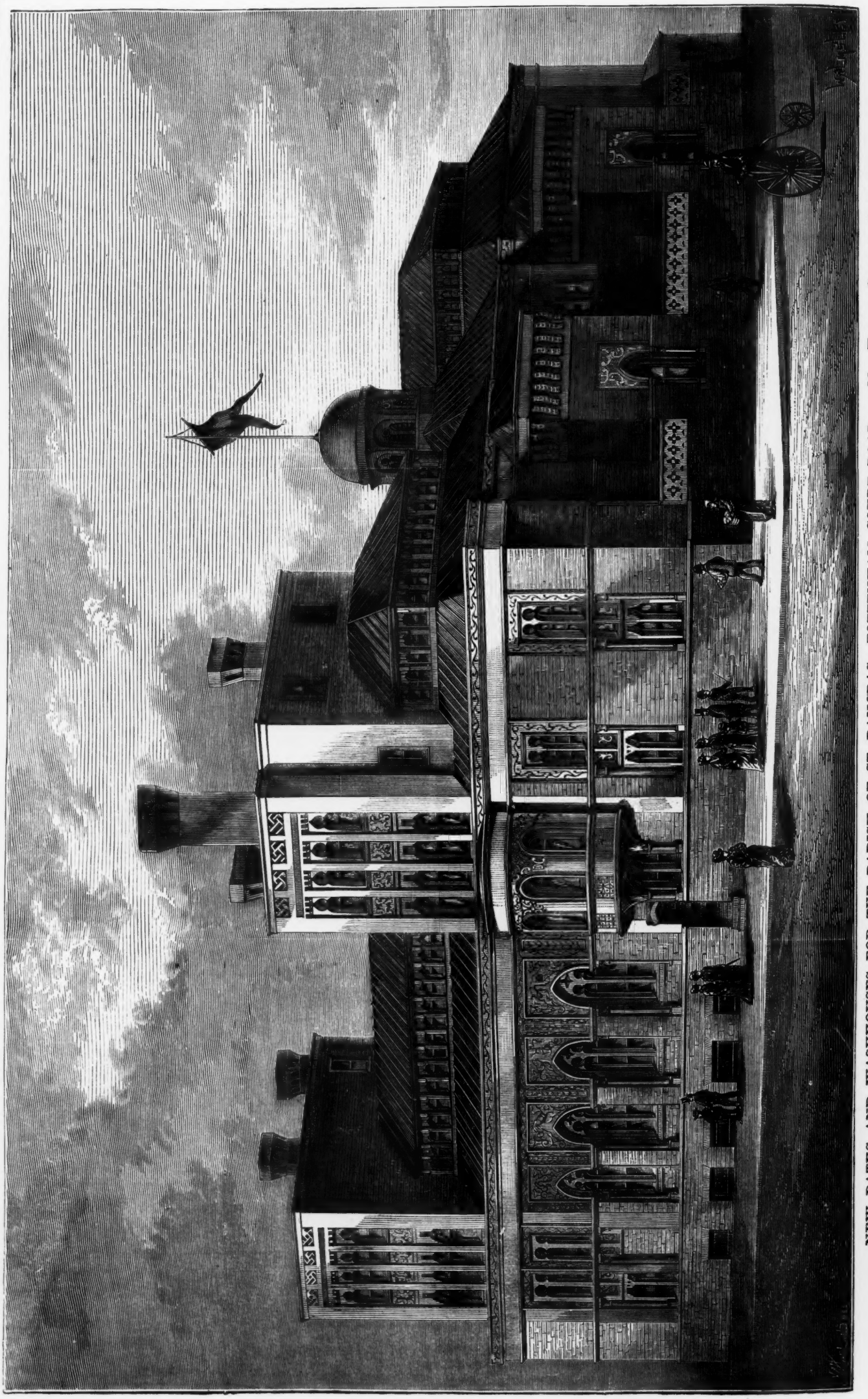
When the first stone was laid, Mr. Thornton, the chairman, gave some statistics as to the baths in King-street. He said he had no doubt that many of them would remember that about eleven years ago the Vestry of St. Pancras agreed to erect baths and washhouses in the parish, and after great anxiety and trouble they purchased freehold land in King-street, and erected an establishment at a cost of 23,000*l.* That establishment was opened in May, 1868, and since that time it had proved a very great success. A few figures would prove interesting. In the year ending March, 1869, the bathers at King-street numbered 145,735, and the washers, 9,425; 1870, bathers, 149,474, washers, 19,620; 1871, bathers, 152,216, washers, 23,485; 1872, bathers, 165,338, washers, 25,796; 1873, bathers, 184,964, washers, 29,730; 1874, bathers, 195,657, washers, 31,456; 1875, bathers, 199,657, washers, 31,456; 1876, bathers, 215,880, washers, 29,878; 1877, bathers, 221,441, washers, 27,694. Thus 1,629,200 bathers and 226,812 washers had used the establishment during those nine years, and they had contributed 29,299*l.* 19*s.* 2*d.* The debt raised by the cost of the erection had been liquidated by about 1,150*l.* a year. 10,625*l.* had been paid off, of which the establishment had contributed 8,490*l.* 14*s.* 10*d.*, and there now remained 10,625*l.* to be paid off the 23,000*l.*,—the cost of the building and site. The Commissioners had also contributed a very large sum for improvements. The site for the building now in course of erection was purchased of the School Board for 5,000*l.*

NEW BUILDINGS, FLEET-STREET.

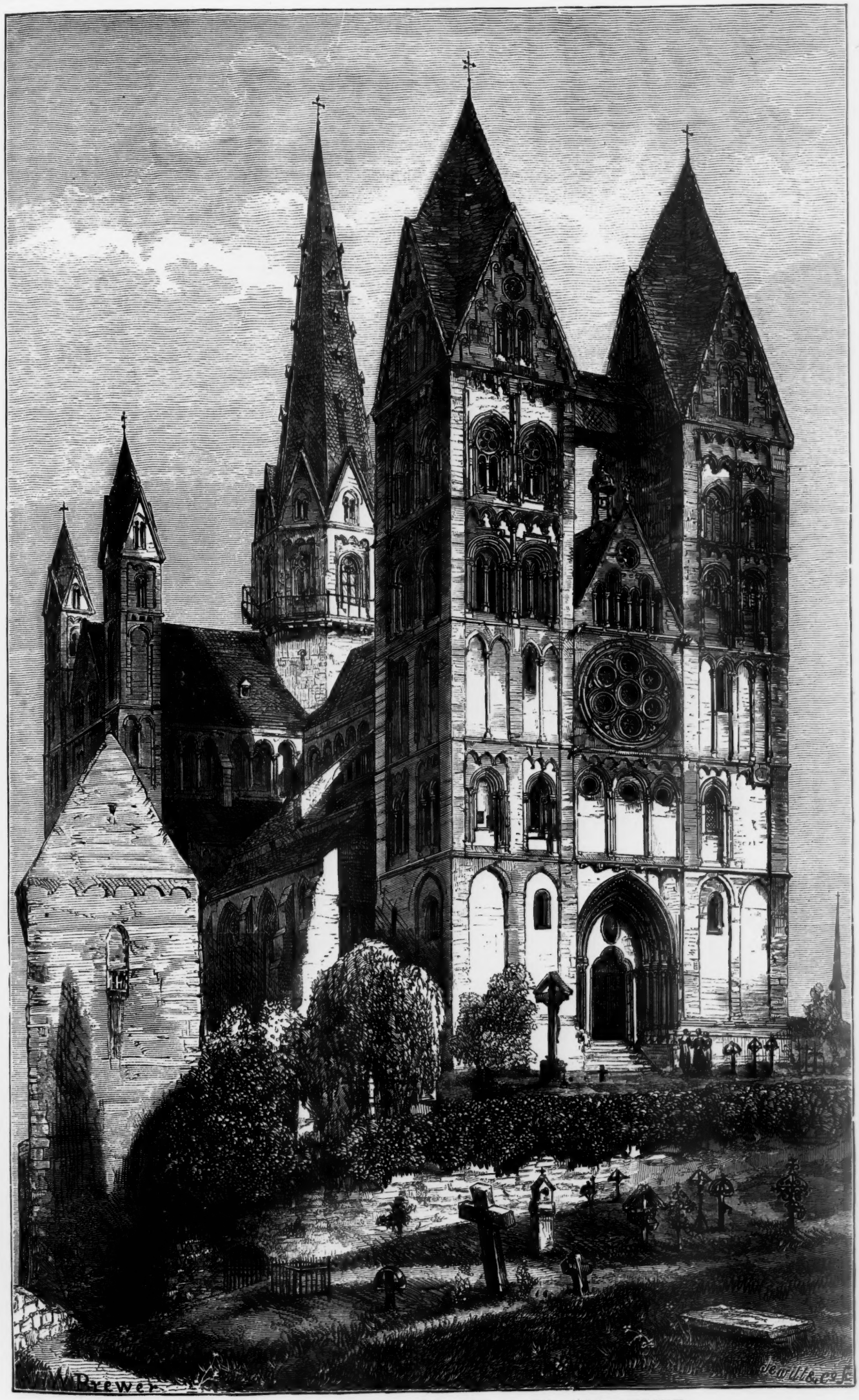
Sir,—In describing the above you state that the figure-heads, cornice, window dressings, pediments, &c., are of Dumfries stone.

The whole of the red stone in these buildings is from Messrs. J. & A. Murray's quarries, Corsehill, Annan, N.B.

Samuel Tickett.



NEW BATHS AND WASHHOUSES FOR THE PARISH OF ST. PANCRAS: TOTTENHAM COURT ROAD.—Mr. Horace Gundry, Architect.



THE CATHEDRAL OF LIMBURG-ON-THE-LAHN: WEST FRONT.

NEW BATHS AND WASHHOUSES FOR THE PARISH OF ST. PANCRAS: TOTTENHAM COURT ROAD.—MR. HORACE GUNDRY, ARCHITECT.

THE CATHEDRAL OF LIMBURG ON THE LAHN.

RESTORATIONS ABROAD.

WE have previously described, and have more than once given illustrations of, the interesting Cathedral Church of Limburg-on-the-Lahn; and our chief reason for again reverting to it is the fact that this beautiful building is at present undergoing a restoration, against some portions and particulars of which it is our painful duty to raise an earnest protest, and to expostulate—we fear, alas! with little hope of success—with those who are engaged in a work, some of the details of which, we feel sure, are ill considered, and will cause great regret to the archæologist, and, in fact, to all those who are interested in ancient buildings.

The restoration of such a church as the cathedral of Limburg-on-the-Lahn must, under any circumstances, be an excessively hazardous and dubious undertaking. The building in its present condition looks so exceedingly beautiful, from the exquisite tints which age has given to its surface, and forms such a strikingly picturesque object when seen in combination with the rock upon which it stands, the river which flows past it, and the highly-interesting ancient buildings which surround it on every side, that an architect ought to think long, and ponder well, before he attempted to do anything which might mar or interfere with a scene so charming, and a combination so highly picturesque and interesting.

Now the reports which have reached us from trustworthy sources lead us to suspect very strongly that those engaged in the restoration of this beautiful church have not given sufficient weight to the considerations which we have previously suggested. We are told, for instance, that it is decided that the curious gallery which unites the two western towers shall be removed, if this foolish act of vandalism has not already been perpetrated. These galleries uniting the towers of the German churches are very interesting features, and are, if we mistake not, peculiar to Germany. They are also found almost exclusively in churches of an early date, such, for instance as Limburg Cathedral, the Church of Boppard (where it has been recently destroyed), the church at Dietkirch-on-the-Lahn, St. Dionisius at Esslingen (Mr. Webb, in his "Continental Ecclesiologist," describes the towers of this church as being united by two galleries, one above the other: if this was the case one of these galleries has disappeared), the Cathedral of Aix-la-Chapelle, and many other churches of a Romanesque date. It is true that such galleries are occasionally found in churches of a later date, but rarely. It is probable that the galleries now existing in the churches we have mentioned are not coeval with the towers which they unite, but we have little doubt that they replace others that were, and the fact that these galleries are represented in most ancient views, especially those in the "Nuremberg Chronicle," a work published in the year 1493, proves beyond all question that these galleries were in common use previously to that time. In the work alluded to (the "Nuremberg Chronicle"), there is not a single representation of a church, with Romanesque towers, which is not furnished with one of these singular galleries. One of the uses of this gallery or bridge is obvious enough. It, of course, saved the expense of a staircase in both towers. It also saves the trouble of going down to the ground and mounting another staircase when it is necessary to go from the bell-chamber in one tower to that in the other. We may venture to hazard a third use. There can be no doubt that at all times during the Middle Ages church towers were used in extreme cases as places of defence. They were, in fact, the very last stronghold of the besieged, and church-plate, valuables, manuscripts, &c., would, in case of necessity, be placed in the tower which had no staircase. The wooden bridge or gallery could easily be thrown down, and they would be placed in a position almost inaccessible, for a time at least. With regard to the picturesqueness of this singular feature of ancient German ecclesiastical architecture there cannot be two opinions; and even were it not so, its very singularity ought to plead for its preservation. This being the case, we cannot conceive what can induce the German architects to destroy this feature whenever they can get an opportunity of doing so. We fear this mischievous propensity may be traced to that hard, inartistic spirit of "purism," which renders German restorations and modern German architecture so dry, cold, and thoroughly uninteresting. If a German architect has to restore a Romanesque church he considers it his duty at once to destroy every feature which is not Romanesque. If it is a First Pointed church which he has in hand, everything which is not First Pointed work must go, and of course anything like Renaissance furniture must be swept away as something too abominable to contemplate for a moment; and thus most German churches, when they are restored, are robbed of the whole of their interest, and might just as well be entirely rebuilt from the ground. This is the case with the Abbey Church of Laach, the Church of Sinzig, the Cathedral of Speier, St. Godehard, Hildesheim, and many other churches which we might mention. Now it is just such a fate as this which we dread for the Cathedral of Limburg-on-the-Lahn. It is only just to say that all German architects are not imbued with this mischievous purist spirit; for a more conservative restoration than that of the Cathedral of Paderborn, under Mr. Guldenpfennig, it has rarely been our fortune to see.

Another thing which is being done at Limburg is to be seriously reprehended, and that is the removal of the singular old screens which cut off the transepts from the choir. One of these screens is shown in a view which we published of the interior of the church in a former volume. We understand that these screens are to be re-erected in the arches of the apse; but here they will do exactly what they are not wanted to do, that is, they will block out the view of the aisle which surrounds the apse.

Our view represents the west end of the Cathedral of Limburg before the commencement of the restoration. It is from a drawing made entirely upon the spot, and may thus stand as a witness and a protest against any alterations and modernisations which may be attempted by the present restorers.

THE CLUBS IN AUTUMN.

THE London clubs have just passed through a phase which may not inaptly be termed their moulting season. They obey the general law of animated nature as respects the function of discarding and renewing integumental coverings once a year. This they do in the slack season of autumn, when it is convenient to cast off old garments and put on new. Each and all have been engaged in performing this operation, and they now shine forth fresh and gay in full feather and bright plumage.

The business of renovation carried out in different establishments is more or less extensive, according to the quantity of work to be done, and it is accomplished in two ways. When only a moderate amount of renewal is needed it is the practice to keep the club open and place workmen in first one part and then in another, paying off, so to speak, the debt of dilapidation by instalments. But when a more thorough and complete repair is undertaken, the whole house is at once given up to workmen, and the members are received as guests in some other club, which, in its turn, closes, and the hosts return the visits of their guests. The latter plan is to be preferred; it has many advantages, and, looked at in every point of view, it is the best; for, when the job is done piecemeal, members are mixed up with workmen, and a large amount of discomfort is experienced by the clubite. All is topsy-turvy; both morally and physically the tables are turned. The coffee-room is first taken in hand, all the furniture is ejected, tables are no longer performing duty round the room, they have retired from business, and are frolicking in passages, kicking up their legs wildly into the air, and, close by, the chairs are at high-jinks, playing leap-frog over each other, or sticking on the shoulders of a fat well-stuffed brother. All this is bad enough; but upstairs matters are worse, for, on entering the library, you find that poets, philosophers, and statesmen have descended from their lofty positions, and are lolling disreputably on the floor, cheek by jowl, in a far corner, and you are pained to observe the degradation which has befallen Messrs. Shakspeare, Pope, Milton, & Co.

Besides upsetting the household gods, this invasion and occupation of the premises by an army of artificers is attended by many inconveniences. The dignity of the member is lowered, the house is no longer his own, and he cannot wander where he lists. At the very threshold the porter indicates to him where he may and where he may not go. He no longer orders; but is ordered, and creeps about, stumbling over stray articles, into rooms shorn of their usual air of comfort. The times are changed with a vengeance; our authority is usurped something like that which occurs at home when the man-midwife and monthly-nurse enter into possession. In both cases the lord of the creation is shorn of a large portion of his dignity; he is no longer master of the house, is humbled and degraded, and heartily wishes the days of candle and whitewash over. At these times the service is utterly deranged; the butler, head-waiter, and *chef* are away performing their autumn manœuvres. The club organism may be said to be in a state of semi-vitality or suspended animation, undergoing resuscitation at the hands of members belonging to the profession of painters, plasterers, &c.

When a move is made into another house the clubite enjoys a change of scene somewhat like a trip from home. True, he meets with a few old acquaintances, but all else is new, and everybody he meets in the saloon is busily discussing plans of autumn excursions. London attire is doffed and country donned. Shoddy suits, billycock hats and shooting-jackets are the order of the day, and the foreign Bradshaw is much in request. At dinner he finds a sprinkling of one or two of his own waiters dressed not in their usual butterfly evening garb, but in plain morning attire, and looking ill at ease and by no means at home. Strolling out at night he passes his old club-house, which no longer shines forth with glow-worm light from top to bottom, forming a striking contrast to other abodes. All is dark, dismal, and dreary, as if covered by a gloomy pall. The front door, ordered by printed rule to be kept open seventeen hours out of the twenty-four, is closed, the paint is scraped off, the white blinds and red curtains are gone from the windows, and he turns from his old haunt, fumbles for his latch-key, and prepares for bed.

A STEP IN AN ARCHÆOLOGICAL DISPUTE.

THE Imperial German Consul-General in Syria has taken a step of which the propriety has long been obvious. Informed of the existence of a number of *terra-cotta* objects, which purported to throw a flood of light on archæology, art, epigraphy, sepulchral usages, and thus on the architecture, even of Eastern Syria, the Consul has thought it more consistent with his duty to make investigations *in situ* than to take the less troublesome course of denouncing the whole collection as forged. The Consul, in a letter recently published by a contemporary, refers to several points of a controversy which has attracted more attention in Berlin than in London; and states that Dr. Almkvist, who is Professor of Oriental Languages at the University of Upsala, has furnished a real proof, not only to the impartial, but also to the prejudiced, observer, that pottery wares had been lying for a considerable time on the rocky soil of Moab. Dr. Almkvist himself selected a spot in the rocky wall of a cave, dug into it for 2 ft., and found there a written vase. The Consul uses the expression "stratum of flint," by which he possibly means stalactite. It is, however, very desirable that some practical geologist should give an opinion as to the age of the formations opened out.

After Dr. Almkvist's discovery, the Consul-General, accompanied by Herr Schick, councillor for architecture; Ser Murad, first dragoman to the Imperial consulate; and A. Niepagen, inspector of ruins of the Convent of St. John, visited the caves of Kubeibe, Mack'ad, and Kyriath-Aleyan. The cave which they selected to search was "covered by a kind of fine grey moss [probably lichen is meant], which was distributed over it like mould, having ruts worked by the passage of insects, a proof that no human hand had touched it for long periods." The earth thus covered contained fragments of rock, of upwards of a cubic foot contents; and from behind these rocks, the party extracted fragments of clay, bearing inscriptions, a small idol, and some bones. On clearing away this ancient *débris*, a niche was exposed in the side of the cave. In a crack above this niche they found a large idol, in two parts, which bore, like the idols now at Berlin and in Jerusalem, embossed Aramaic letters in front, and indented letters behind.

It is only by the hazardous plan of accusing four respectable German officials of reporting to the Imperial Government a tissue of false-

hoods that any attempt can now be made to support the charge of forgery against the existing collections in block. Of course, the authenticity of an individual object may be matter for distinct inquiry. But that there exist in the soil of Eastern Syria vases and figures of an interest very superior to those recently found at Cyprus, there is now no pretext to deny.

We could have wished that some responsible English traveller, of geological experience, had investigated this subject before. There is, however, no doubt, ample room for further investigation. One of the points on which it is interesting to find light thrown, is that of the practice of cremation by a Semitic people; which, judging from the use of the Aramaic alphabet, these cave worshippers were. Some of the vases in Jerusalem have been translated in this country as bearing mortuary inscriptions. The early mythology of Syria is also illustrated to an extraordinary extent. As to history proper, we are unaware that any records have been found like that of the Diban stone. But after the recent discoveries of the cuneiform records, it is impossible to prescribe a limit to the information which may be found inscribed on the durable material of burnt clay, although buried for thousands of years.

HALIFAX PARISH CHURCH.

It is proposed to restore the parish church of Halifax, under the direction of Sir Gilbert Scott, R.A.

At a meeting held the other day in furtherance of the object, the vicar (the Rev. F. Pigou) said he had made it his business to examine the church a few days previously, and he would vouch for the literal accuracy of what he was about to say. The church was a vast charnel-house. He had gone from pew to pew, and within three or four inches of the floor were human remains. He could show them near the pulpit,—the bishop saw it himself on Sunday,—in one place a human skull, in another pew an arm-bone, in another a rib, in another a shoulder-blade. Look with a light, as the verger bade him do, under the thin partition of the floor of the church, 3 in. from their feet, and they would see wherever the eye rested uncoffined human remains. The pipes from the heating apparatus ran right through these remains, and no wonder, therefore, that they had the faint and sickly smell of corruption which pervaded the church. The uneven state of the pews was owing to the fact that by degrees coffin-lids had given way, and the pews had sunk into the depressions thus caused. It was not proposed to sweep away with wholesale indifference to the past all the valuable work, and what they had been accustomed to care for; it was not proposed to efface a single monument of the true past. In their parish church they had a building second to none in its grandeur of outline, and it ought to be their pride to be able to point to it as indicative of the pious care of this generation. He was encouraged by the promise of subscriptions which had been made; 10,000*l.* was all that was at present sought. Some thirteen persons had already subscribed 5,000*l.*

Sir Gilbert Scott, in giving an account of the suggestions and advice he had given with regard to the church, said he should be glad to get rid of the word "restoration." It had been so misused as to express something very different from what on that occasion was intended. "Reparation" was a better word, but it did not express all. They wished to repair the church, and hand it down in as good a condition as it had been in the past, but that did not imply all. Reparations had been made from time to time, some of which were good, but some wanted improvement; therefore he did not think that reparation would do. Dealing with a church like that, was something like dealing with a grand old institution like the British constitution. Both were venerable institutions, erected in years long gone by, but had undergone changes, some of which had become obsolete, and others had been found injudicious, and in dealing with each one needed an underlying stratum of deep reverence. It was only when the alterations which in the course of time the church had undergone had been proved to be injudicious, and militated against the objects of the church, and against its sacred use, that they ought to venture upon obliterating or removing them. Their object ought to be to hand down the church to future generations in as good a state as they had received it, but like the tree having dead branches, they ought to deal with it as a judicious husbandman would deal with the tree — cut off the dead branches and insert better ones. That glorious old church, as they all knew, and as Mr. Fairless Barber, the antiquary, not only of that place, but of Yorkshire, had so admirably laid down in a paper on the subject,* had arrived at its present form through a long series of very interesting changes. It was founded many centuries back. They did not know exactly when, but they knew the existing building went back to Edward I., and they thought the church existed many ages before, and it was their hope that it might exist for as many ages to come. They could still find some work of the time of Edward I. They could trace step by step the changes which had been made in the fifteenth and sixteenth centuries, and about the middle of the sixteenth century they arrived at the form of the building which it still possessed Subsequently to that time its fittings were almost wholly renewed, viz., in the time of James I. and Charles I. The fittings, or the sittings, he ought to say, were of great beauty, and thoroughly in character with the feelings of the period. Nothing could be more beautiful in their way than the fittings in the nave, which were similar to those of St. John the Evangelist, Leeds, founded by Mr. Harrison, about 1621. Not only the fittings, but the galleries and some other things were all of the architecture of the time of Charles I., all of which, if they did not interfere with the use and object of the church, he would preserve. Next, he would point to the additions made in the last century, in the days of Queen Anne. One of these was the great western gallery, which cuts across some distance from the west end, and the other was the screen separating the tower from the rest of the church. This screen he would preserve, as both useful, ornamental, and interesting. He could not speak in the same terms of the gallery. It cut off from the length of the church one-fifth, and he could not, from any associations connected with it, advise that it should be preserved. The church had a vista of ten arches in length, which was reduced by this gallery to eight arches. The gallery also hid the two beautiful arches of the nave to the west of it, and the beautiful arch leading into the tower. The only piece of destruction he would be guilty of would be the removal of that gallery—not for the sake of destroying it, but for the sake of displaying to view those noble parts of the church which it now concealed, and still more for the use in public worship of one-tenth part of the church which they were now prevented from utilising. The old seats he would most carefully preserve, and restore in the sense of putting them into repair, and handing them down undecayed and uninjured. But what was underneath those pews? They must take them up, for just beneath was the floor fearfully decayed in parts, with the boards 1 in. or 1¼ in. apart, and between they might thrust a hand down, and the vicar had already told them what they would find. He had that day seen lots of human bones, and had come away in disgust. Having dwelt on the sanitary aspect of the matter, and shown how impossible it was that the atmosphere of the church could be healthy, Sir Gilbert referred to the condition of the roofs. The nave and chancel roofs were in a fair state of repair, but still required reasonable, though not extensive reparation. The whole of the lower southern roofs were bad, as also the northern roofs, and required very careful and well-considered reparation. The building was not unsafe, but it required careful and loving reparation. From what he had said, they would judge of the general spirit in which he would deal with it. Treat it in a thoroughly conservative manner,—not like an old-fashioned Tory, who believed that "whatever is, is right," nor yet like a new-fashioned destructive, who thought that "whatever is, is wrong." Rather lean to the Tory, believing that everything is right until it is proved to be wrong; and in re-arranging it to do it lovingly, so dealing with the old church that they might hand it down to future generations, not in renewed youth, but in a sturdy and green old age. Whilst he was glad to hear there was so much conservative feeling in Halifax with regard to their parish church, he advised them that in dealing with it they should commit it to the care of such antiquaries as Mr. Barber, and follow very much what he advised.

* The substance of this paper, giving much curious historical information about the church, will be found in last year's volume of the *Builder* (vol. xxxiv., p. 907).

HYDE PARK, KENSINGTON GARDENS, AND THE POWDER MAGAZINE.

Embracing an extent of one mile and three quarters from east to west, and of over half a mile in equable width from north to south, the whole interval being beautifully wooded park, and surrounded by the most fashionable suburbs, no other city possesses within its precincts such a resource, the value whereof is inestimable, as it tends to the recreation and enjoyment of a population of four million souls, pent up within a circle of ten miles in traverse, covered with houses, and which year by year is still expanding.

The borders being beautifully planted and shrubbed, and walks cut in every required direction, both park and gardens have of late years acquired a greater appreciation, which makes every intrusion on the public open space more intolerable to those whose daily walk needs enlargement rather than diminution.

On an eminence commanding a great range of park from Kensington Gardens to Park-lane, and from Bayswater-road to the Serpentine, at a short distance from the ranger's mansion and grounds, a new building of three stories has been just erected and finished in the modern style, covering an area of 45 feet square,—of course, for the occupation of some official. Also a hideous and lofty building with a rounded zinc roof, for the steam roller for the roads; besides that a new Ordnance Office, with additional out-buildings, have been recently added to the Guard Barracks. There is, however, another building, near the Serpentine Bridge, sunk in a hollow, occupying an acre of ground, obstructing the direct line of access from Westbourne-terrace to the Exhibition-road,—the Powder Magazine. Round this the new road winds by a descent of 10 ft., all traffic having again to ascend in the circuit to the road so recently opened to the public; whereas a road cut straight through the Magazine inclosure from the bridge would save not only a deviation of 200 yards, but also the descent and re-ascent of an elevation of 10 ft.

As over 1,000 cabs and even more private carriages use this route every day, surely some more appropriate position could be found for the storage of gunpowder, as well as the allocation of a guard, which has barrack-rooms both there and at the vicinity of the Ranger's Lodge for its protection.

An extensive store of gunpowder, however picturesque, is not an agreeable object within view of ranges of fine houses, such as border the Kensington and Bayswater roads; and surely ample accommodation could be found for the storage of such explosives, say at Wormwood Scrubs, or any other vicinal and less populous suburban quarter.

The site recommended for a royal palace by the writer in the *Builder* of the 7th July last is about 300 to 400 yards distant from the bridge and the magazine. It is on the highest and most open elevation of Kensington Gardens; commanding views of the park to Kensington on the west, Park-lane on the east, Bayswater-road on the north, and Kensington-road on the south, being also open to both ends of the curving Serpentine and its beautiful border walks, interned within a scope of park grounds of nearly 800 acres, with full-grown plantations and shrubbed floral walks. No other city of Europe could offer such a position for a royal palace within its precincts.

The plateau selected for a site is a quadrangular space of about twenty to thirty acres, bounded on three sides by noble foresters, and the frontage to the western glade is at least 100 yards, clear of all "brancage." The palace frontage might advance 40 ft. upon the glade, thus leaving space for two side windows commanding open views to east and west.

There would be ample space for gardens, offices, and adjuncts, and the modern building now used as a powder-magazine would make handsome and commodious stables, with only a little alteration.

Seeing the effete and smouldering condition of the old Palace, it must soon be either demolished or restored at an enormous expense; and as the position on the boundary wall of the extreme end is most inappropriate, the erection of a new and appropriate structure would be of great benefit to the Royal Family.

Until the new palace may be completed, there need be no occasion to interfere with the old building; but then all the adjacent grounds, both within and without the old boundaries,

should be thrown into park, and fenced in with iron railings; and above all, a public roadway practicated from Kensington (at the Royal gateway) to Notting-hill. This would greatly extend public privileges, and, at the same time, a palace worthy the British Sovereign might be attained in the right place, which would also be nearer and more agreeably accessible to the nobility and gentry of London. T. H. H.

BIRMINGHAM TO-DAY.

The building trade is in most branches not nearly so busy as it has been for a long time past, several important works are approaching completion, and no work of any magnitude has been recently begun. The dome and cupola at the Municipal Offices are now complete, and the pediments with their statuary nearly so, and the internal finishings are in progress. The new building for the Imperial Hotel in Colmore-row is also nearly complete, and the block in the same row for the offices of the Midland Land Corporation and the Birmingham School Board will be ready for occupation in a few weeks.

The nineteenth Board school has just been opened, and another will be ready at the beginning of the new year, and the School Board announce that they intend building seven more to complete the educational scheme, making twenty-seven schools, to accommodate 25,000 children, at 10 ft. super. area per child. The rate is now 7d. in the pound. The school buildings are perhaps the most picturesque and ornamental in the neighbourhood. The denominational schools, not under the control of the Board, instruct about 24,000 children, so that nearly all the children in the town of school age attend school. It is to be hoped that a marked effect will be observed in the manners and habits of the rising generation in consequence of the instruction they receive, for it cannot be denied that Birmingham enjoys the unenviable notoriety of harbouring some of the greatest ruffians and blackguards in the kingdom. The language heard in the streets occasionally from both young and old is enough to make even an old builder shudder,—"scaffold grammar" is mere milk and water to it,—and the robberies from the person with violence received the marked attention of a judge of assize recently, when he sentenced several ruffians (of both sexes) to penal servitude, with a fair dose of the lash. It appears to me that the system of building entries, from the streets, leading to courts behind, which at night are dark and dismal, has a good deal to answer for in that particular. It is desirable especially to call the attention of the authorities to this matter. The practice is almost peculiar to the place, and it is very conducive to street robberies and immorality.

A subscription has been set on foot, and well responded to for the purpose of erecting a fountain and canopy with a medallion portrait in honour of Mr. Joseph Chamberlain, M.P., three times Mayor of Birmingham, for his successful efforts in connexion with the gas and water works, and the adoption of the Artisans' Dwellings Act. The design has been prepared by Messrs. Martin & Chamberlain, architects, and will shortly be carried out, and the fountain erected in the open space at the back of the Town-hall. Sir Josiah Mason's College, and the new Assay Offices in Newhall-street, are both up to the roof, and the proposed extension of the free Public Library, which is to cost over 30,000*l.*, is on the point of being let.

The general trade of Birmingham is still very dull. That it is so is, I think, not altogether undeserved. The manufacturers of the better class of goods are much better supplied with orders than are those of the very common sort, and this fact seems to indicate that the world in general is tired of the wretched make-believes and shams to which it has of late years been treated. Fancy drawer-locks the wholesale price of which is 2s. 6d. per dozen! These are mostly exported to our colonies, and the colonies refuse to have them any more. So with the common description of firearms. The makers of the better sorts are fairly employed, but great distress exists amongst those who can only make the common sorts. Even our black friends on the Gold Coast, Ja Ja and Oko Jumbo, refuse now to fight without good rifles, and the makers of the six-and-sixpenny article want orders in consequence. The makers of edge and other tools also seem to fail to recognise that style is as necessary in their branches, as it is in a more useless and purely ornamental manufacture. Masons' tools of Birmingham manufacture cannot be bought here under 9d. per pound, and are clumsy and ugly, whereas others of Manchester make, of a decidedly superior quality and style, are sold with a profit at 7½d. per pound. The same remarks apply to many joiners' tools.

A friend who travels much amongst coal-mines says that at the present moment in the Black country of Staffordshire there are many thousands of tons of coals stacked at the pits' mouths awaiting sale, and this condition of things has existed for some time past. Now, one of the things not generally known is the fact that bituminous coal exposed to the open air and rain soon loses its gases, and in time becomes little better than so much cinder. The rain which falls upon it is absorbed into the coal, and is tenaciously held therein, so that in purchasing wet coal we buy a quantity of water, which in the furnace requires a portion of the remaining coal to drive it off, before the coal can burn, thus causing a double injury. The policy of the coal-miners, therefore, in restricting the output of coal wherever there is an accumulation above ground, is not the unmitigated evil which some would represent it to be. Still, it may be asked, why is there an accumulation?

A practice of street-cleansing which has prevailed in Birmingham over thirty years, and which finds little favour in other towns, is the use of machine-brooms drawn by horses. Set at an angle with the street, the broom as it is drawn along revolves, and sweeps the mud into the gutter. If the mud thus swept up were in all cases immediately removed no possible objection could be raised, but very frequently, especially on Saturdays, the mud is allowed to remain in the gutters until Monday, or even later, forming a continuous trap for the unwary pedestrian, and many are the curses, loud and deep, which are vented upon the devoted heads of the scavenging department in consequence.

A movement is in progress for the establishment of a permanent court-house for the coroner for Birmingham, similar to that in Manchester and elsewhere. There can be no doubt that such a court, if situated in a central position, would be a great improvement upon the present custom of sitting in public-houses, and the movement, therefore, deserves success.

In a late number of the *Builder* are quoted some remarks by a correspondent of the *Birmingham Daily Mail* upon jerry building here, and the need of better inspection. Birmingham is not worse than most other large towns in respect to this question. Speculating builders build to sell, not to keep and use, and as long as a low standard of commercial morality is recognised by the public, we may expect such builders to take advantage of it if allowed. Notwithstanding such apparent addition to their profits, as is complained of in the article quoted, there has been during the past three months a large number of failures amongst this class, between thirty and forty having filed their petitions in the local court. Jerry building is, therefore, like all other trashy productions, at a discount just now. The public is doubtless tired of being compelled to live in houses of diminutive proportions, with 9-in. outer walls, and 4½-in. party walls, 7 in. by 2 in. joists, and break-neck stairs, with locks on the doors so common that the makers say they cannot afford to stoop to pick one up, if dropped. A very bad practice exists amongst all branches of building operatives in Birmingham, except masons, of working systematic overtime as long as daylight permits. By the rules no extra pay per hour is payable until seven o'clock in the evening, with the result that every one works till seven o'clock as a regular thing. It is not surprising that the master-builders have not before this discovered how much this practice operates against themselves as well as the men in the long run; because it is found that when men work overtime regularly they always lose time in the morning, and lose the opportunity for recreation and mental cultivation which long evenings afford. Another bad practice is the late breakfast-time. Beginning work at six o'clock, a man becomes very much exhausted by half-past eight, and the punishment is felt by those who have been in the habit of breakfasting at eight o'clock in other districts, and who come to work here. E. G.

City Commissioners of Sewers.—At a meeting of the Commissioners of Sewers on Tuesday last, a memorial was presented praying for the widening of Upper Thames-street.

CITY AND SPITALFIELDS SCHOOL OF ART.

The annual distribution of prizes to the students of this school took place in the School Hall, Skinner-street, Bishopsgate, on the 27th ult., the Lord Mayor in the chair. The annual report shows that the school, which was established in 1842, gives instruction to upwards of 200 students, most of them artisans, under the direction of Mr. S. F. Mills, head-master. During the year lectures were delivered on "An Art Student's Prospects," by Mr. N. H. J. Westlake, F.S.A.; on "Florence and Michelangelo," by Mr. T. Chatfeild Clarke, architect; on "Ornament and Colour," by Mr. George Aitchison, B.A., architect; and on "The Present State of Industrial Art," by Mr. C. L. Eastlake, secretary of the Royal Institute of British Architects, and were reported in the *Builder* at the time. The master's report details a large amount of useful work done, and shows that the fees received from students amounted to 181*l.*

Mr. J. C. Horsley, R.A., was present, and after some introductory remarks, said that perhaps he might be considered to have some little claim to speak on the subject of schools of art, seeing that for a very great portion of his life he had been actively connected with them. Thirty years ago and more he was head-master of the figure-class of what was then termed the "Government School of Design" at Somerset House; and since then he had assisted for several years in the adjudication of the works submitted to the South Kensington authorities in competition for the national prizes. Some notes of progress made might be usefully given. In 1847, in addition to the principal Government School of Design already mentioned, there were thirteen branch schools (of which the City and Spitalfields School was one), having a total of 1,734 students on their books. Now, in 1877, there were 141 Schools of Art (besides 883 art classes) affiliated to South Kensington, having in all 59,131 students under instruction. In 1847 the schools were officially under the Board of Trade, and one useful under-secretary managed the whole of the business connected with them. That under-secretary was now known as the Right Hon. Sir Stafford Northcote, Chancellor of the Exchequer. At the present time, the Department of Science and Art, which might be said to be almost a distinct branch of the Government, requiring a very strong official staff, controlled the schools. In 1847 the splendid and unique museum at South Kensington was not even dreamt of, and it was to be hoped that the energy and discrimination of those who might almost be said to have forced successive Governments,—always sluggish, be they Whig or Tory, in fostering art education,—to establish and develope that Museum would never be forgotten. He for one never entered the Museum without feeling grateful to such men as Henry Cole, Richard Redgrave, Captain Fowke, Soden-Smith, and others associated with them. We were rather apt in the present day, in the presence of "new brooms" whose power to "sweep clean" had yet to be proved, to forget those old and tried ones who had been worn down to stumps and handles in the national service. Undoubtedly great progress had been made in the art-education of the country during the past thirty years, and with what was now being done and projected we might look forward with confidence to the work of the future. Having made these general remarks, Mr. Horsley addressed himself to the students, disclaiming any desire to speak to them dogmatically or magisterially. He said he spoke as a student to students, and would remind them that no true artist ever lost his sense of studentship. The idea of excellence which the artist ever had before him was for ever becoming higher, and its attainment more and more hopeless; and were it not for the infinite reward, and for much of what the world called success which was attained in the mere striving after excellence, the artist would almost be inclined to give up his task in despair. Art-students should not forget that the foundation of their success must be laid in perseveringly sticking to and mastering all the tedious, but none the less necessary, elementary studies. There was a striking difference now in the ages of students at the Academy. In his student days they were all mere lads; now they had a much older class of students, and many of them were not only "bearded like a pard," but might be fathers of families, full of anxious cares as to what

Byron called "the inflammation of the weekly bills." He thought that those who entered upon the study of art while young, and before the imagination became active, had the best chance of thoroughly mastering the technical details which were essential to success in art. True it was that Landseer and other great artists ultimately attained an almost fabulous celerity of execution; but that celerity was only attained after long years of patient labour and practice. While, however, the student was to be diligent in mastering, line upon line and precept upon precept, the technical details of his art, he must at the same time be a constant student of nature. The greatest of painters, up to the very end of their time, never deserted the study of nature. Turner himself died in a Chelsea lodging-house, taken by him on purpose that he might study sunsets on the river. Old Stothard used to go about, looking for all the world like a tax-gatherer, with a little ink-bottle tied to his button, and a large red-covered book, with which he used to sit down in hedgerows and odd corners, and sketch from nature. Having reverted to the opportunities which the City companies had for the promotion of mural painting in the decoration of their halls and public buildings, Mr. Horsley concluded his address, which was interspersed with several anecdotes and personal reminiscences, not the least interesting of which was his account of how he, as a boy, won and received the Academy medal, from the hands of Sir Martin Archer Shee, the then president. He explained that at the Royal Academy the students did not know beforehand, nor did even the Academicians themselves know, who would be the recipients of prizes until the names were announced by the President, and he graphically narrated the expectation with which he, encouraged by the generous encomiums of his fellow students, awaited the announcement of the successful medallist, and how, when the announcement had been made, he ran from Somerset House to his home at Kensington, and exultingly exhibited the trophy to his mother, who placed all the resources of the family larder at his disposal in honour of the event. His bill of fare on that occasion began and ended with "damson cheese," and although he had partaken of many more elaborate *menus* since then, he had never sat down to table with greater zest.

SERIOUS CHARGE AGAINST A WATER COMPANY.

A case which came before Mr. Partridge, the magistrate at the Southwark Police-court, last week, was illustrative of the danger to health and the sanitary evils which the arbitrary powers possessed by the metropolitan water companies are capable of inflicting. The Southwark and Vauxhall Company were summoned by Charlotte Mary Ann Snook, of Albert Cottage, St. James's-road, Old Kent-road, for refusing to supply her with water after tendering the rates due. The complainant stated that she had been a customer of the company for twenty years, and had been upwards of four years in her present abode. She had unfortunately allowed the water-rate to be in arrears in the sum of 28s., and because she was not able to pay that sum when last demanded the water was cut off. She begged of the collector to call again before doing such a cruel act, but he took no heed of her appeal, and she had since been without water.

In answer to Mr. Partridge, the complainant said she had tendered the amount due, but the company refused to put the water on again unless she paid all expenses for cutting off and replacing the pipe, as well as a quarter in advance. She could not do that, and the consequence was that the drains were stopped, and health was endangered. She further reminded the magistrate that small-pox and fever were on each side of her, and it was necessary that she should have a good supply of water. If the company had waited only two hours before they cut it off she would have been able to pay them.

The magistrate strongly animadverted as to the conduct of the company in cutting off the water, when they had the power to summon her for the arrears. He expressed his regret that the company had their Act of Parliament to support their monopoly, and to act as they had done, but he thought they had been a little too harsh in cutting off the water where small-pox and fever were raging. He added that the company might restore her the supply of water on her payment of the arrears due, and an agent of the company promised to lay the magistrate's recommendation before the directors.

A PECKHAM BUILDER'S CLAIM FOR PLANS.

At the Lambeth County Court, Mr. W. G. Shapley, a builder, at Peckham, claimed the sum of two guineas from Mr. H. W. Woollard, of Lordship-lane, for preparing certain plans and specifications.

The plaintiff stated that in April last the defendant called upon him at his office, and stated that he had some property in Lordship-lane, which he was desirous of converting into shops, and he asked him (plaintiff) to prepare drawings and specifications for the work, stating, at the same time, that a friend was going to prepare some drawings, but that he should pay the plaintiff for his trouble.

John Stagg, clerk to the plaintiff, said he remembered the defendant calling at the plaintiff's office, and making arrangements with plaintiff for the work.

In answer to the claim, the defendant said that he met the plaintiff at the King's Arms, Peckham-rye, when he told him that he intended to make certain alterations on his property, and had been recommended to Mr. Murphy, a surveyor, to draw up the plans, on which the plaintiff said it was quite an unnecessary expense to go to, and offered to draw up a plan and specification, stating that if he (defendant) found that his estimate was not low enough he need not accept it. Mr. Murphy, on seeing the plaintiff's estimate, said it was preposterously high.

The Judge said he had found it to be the ordinary rule in such cases that unless there was a special bargain the work should not be paid for, and the verdict would therefore be for the defendant, with costs.

A BUILDER FINED FOR OBSTRUCTION.

At the Wandsworth Police Court, last week, Mr. Henry John Cox, of Marlborough House, Palk-road, Battersea, builder, was summoned by the Wandsworth District Board of Works for depositing building materials on the footpath and roadway of Palk-road. The case against Mr. Cox having been stated by Mr. Corsellis, the clerk to the Board, the defendant in answer said he applied for and paid for a licence to use the footpath during the building of certain houses. He could not produce the licence, as it had been promised to be sent to him by the Board of Works, but it had not arrived. He produced a receipt for the money paid. Mr. John Pilditch, the surveyor to the Board, said a licence had been granted for the defendant to use the footpath, provided he placed a hoarding round it, and constructed a railed gangway for passengers to pass without going into the road. He had not done so, and his building materials were not only on the pavement, but in the road, for which he had no licence. Mr. Paget, the magistrate, fined the defendant 40s. and 2s. costs.

VAGRANCY.

It has been found that the professional vagrant has a decided preference for those workhouses where provision is made for his accommodation on the old-fashioned plan with associated dormitories and workrooms. Here he can exchange experiences with his brother tramps and give and receive "tips" as to the best "lays," and generally spend his evening in social, albeit somewhat obscene discourse, to the disgust of any respectable poor person who may, by stress of circumstances, be compelled to accept the charity of the ratepayers. The associated vagrant wards are, however, doomed, and new wards on the cellular plan are taking their place. The Guardians of Kensington are about to erect wards for forty males and twenty females, from the plans of Messrs. A. & C. Harston, architects. Here each tramp will, after taking the inevitable bath, be introduced to a separate sleeping-cell, warmed, lighted, and provided with every necessary, but with accommodation for one person only. Adjoining each male's cell is a work-cell, into which he is admitted in the morning, to find a given quantity of granite stones and a hammer for the cracking thereof; should he have occasion to call the attendant he will find in each cell an electric "push," which will cause a gong to sound in the attendant's room. The clothing of the vagrants will be dried and disinfected in a Leoni's gas disinfector in the basement, where will also be found the boilers for heating and for the supply of hot water.

The contract for the whole of the work has been taken by Messrs. Lathey Bros., and it will be carried out under the superintendence of Messrs. A. & C. Harston, architects.

FIBRE.

In 1870 the Government of India offered a prize of 5,000*l.* to the inventor of the best machine or process for the preparation of the fibre of the *Böhmeria nivea* (popularly known under the names of Rhees, Ramie, and China grass), and the terms on which machines would be admitted to competition were widely notified. Many persons declared their intention to compete, but ultimately only one machine was brought to the place of trial. The machine having been carefully tested at Sabáranpur in the autumn of 1872, was found imperfect, and the inventor was adjudged not entitled to the full reward. He was, however, presented with 1,500*l.* in consideration of the partial measure of success he had attained. This machine has not since been adapted by the inventor to practical use, and no improved process of preparing the fibre of the Rheea has been yet discovered by other persons. Meanwhile the demand for Rheea continues, and the conditions which induced the Government of India in 1870 to offer a prize remain substantially unchanged. The President in Council, therefore, considers that it is desirable to renew the offer, and has accordingly notified that a reward of 50,000 rupees will be paid to the inventor of the best machine or process which will separate the bark and fibre from the stem, and the fibre from the bark, of the *Böhmeria nivea;* while a smaller reward, not exceeding 10,000 rupees, will be given to the inventor of the next best machine or process.

THE FORTH AND THE TAY BRIDGES.

Scotland is likely, at no far distant day, to possess two of the most gigantic railway bridges in the world. In the Tay Bridge she has already a structure unequalled of its kind, and active steps are now being taken to secure the construction of the great bridge across the Forth, which has for some time past been contemplated. It is stated that the North-Eastern, the Great Northern, and the Midland Companies in England, along with the North British Company in Scotland, have agreed to contribute a large proportion of the cost of the proposed Forth Bridge, which, it is said, will in some respects be the most stupendous piece of engineering work ever attempted, having the longest spans, at the greatest heights, above the foundations of the central piers.

As regards the Tay Bridge, now almost completed, we learn that 600 tons of ballast per day are now being conveyed to complete the 10,000 tons required to make up the ground for station purposes between the Caledonian Railway and the Esplanade. The work of finishing the bridge is rapidly going forward, and mineral and goods trains are expected to run over the line early in the ensuing month. The directors have wisely determined to test the strength and security of the bridge by passing heavy merchandise traffic over it for some time before it is being opened for the conveyance of passengers.

Steam v. Horse-power for Tramways.—The problem as to mechanical traction upon tramways appears, from some tabular returns issued by the Paris Southern Tramways Company, to be settled. This line has two sections, one of which is worked by horses, the other by steam power. During the first six months of the current year each of these two sections earned 62*l.* per diem, but this sum was earned upon the section worked by horses with an average of thirteen cars, while upon the other section there were only ten cars. Taking the expenses to be the same as they were last year, the cost of each car drawn by horses is 2*l.* 2s. 6d. per diem, or 45·50 per cent. of the total earnings, whereas the cost of steam traction is only 1*l.* 12s. 6d. per diem, or 35 per cent. of the total earnings. The difference in favour of steam traction is, therefore, 10s. a day for every car run.

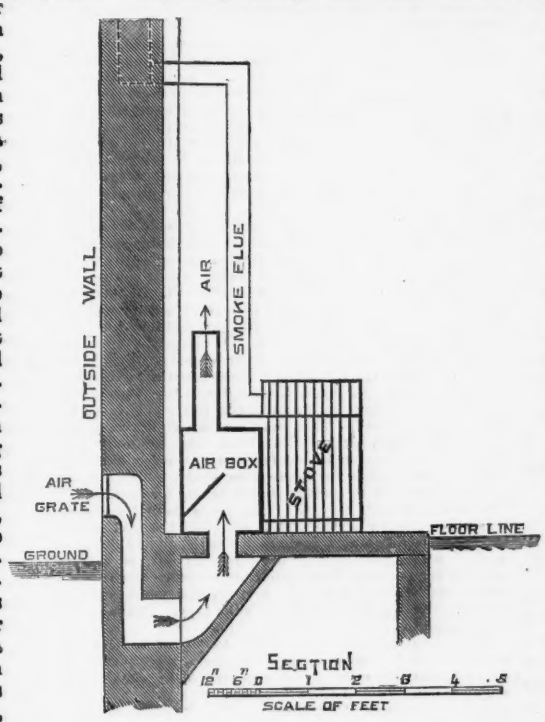
THE PETROLEUM INDUSTRY.

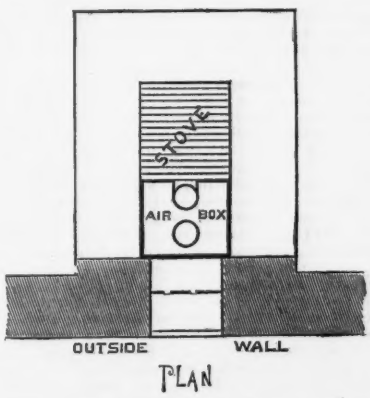
THAT part of the artificial "light of other days,"—or rather nights,—which was represented by the old-fashioned "dip" and "mould" candles has been so largely superseded by gas and petroleum that the present generation fails to estimate to its full extent the improvement which has taken place in domestic lighting during the past forty years, especially in regard to the dwellings of the poor. Gas is not, however, much used,—at any rate, not in London,—amongst the poorer classes, who are, to a large extent, weekly tenants and migratory in their habits. To protect themselves against losses, as the gas companies know so well how to do, conditions which are virtually prohibitory are imposed upon tenants of the poorer class, who would, but for such conditions, gladly burn gas.

Petroleum, now so largely used for lighting purposes, is an American product. Herr Hofer, who was a member of the Austrian Commission at the Philadelphia Exhibition, took the opportunity, while in the United States, to visit the principal petroleum wells, and the result of his observations appears in a pamphlet published at Vienna a few weeks ago. It was in August, 1859, that Colonel Drake discovered near Titusville, in Pennsylvania, a large stream of petroleum at a depth of 70 ft. from the surface; and though this discovery was made only eighteen years ago, it is estimated that the quantity of petroleum obtained in the interval is 2,802,500,000 gallons, of a total value of 46,000,000*l*. It is evident that such results could not have been achieved without the most complete mechanical appliances, and they must be principally attributed to the system of steam boring which has gradually been brought to something near perfection. Thus, at first the wells did not yield more than 180 gallons of oil a day, but the average rapidly increased, and in 1861 a well at Petroleum Centre yielded 11,000 gallons a day. The dimensions of the wells and the yield of oil increased to such an extent that there was quite a fever of speculation; and this fever reached its height upon the discovery, at a place called Tar Farm, of a spring which produced no fewer than 105,000 gallons a day. It is an old story how towns, with numerous hotels, theatres, restaurants, gambling-tables, and so forth, sprang up as if by magic in these districts; and Herr Hofer mentions a place called Triumph-hill, where there are 150 wells within one square mile of ground. The trade increased so rapidly, that before six years after Colonel Drake's initial discovery there were no fewer than 1,000 wells in existence, yielding 120,000,000 gallons a-year; but the progress has been still more rapid within the last nine years. In 1867 the number of wells at work was 1,133, each with an average yield of 103,300 gallons per annum, and in 1875 there were 3,272 wells, each yielding upon the average 94,000 gallons a year. Thus, while the number of wells has increased almost three-fold, the average yield has diminished by more than nine per cent. The price has undergone great fluctuations during the same period; for while the average price per gallon was 1s. 6d. in 1867, it rose to 3s. 2d. in 1869, declined to 2s. 2d. in 1870, and to as low as 9d. in 1874; there was a trifling rise in 1875, and the average for the first six months of 1876 was 1s. 3d. a gallon; but it is not likely that prices will ever be as high as they were in the "fever" years from 1869 to 1872. There are thirty-six Oil Pipe Line Companies, with pipes of a total length of 2,095 miles, which convey the oil from the wells to the railway stations and canals. Every well-owner has a tank, which is filled by his own men, and from the tanks the oil is run into the companies' pumps by means of large pipes. The railway arrangements are not less practical, and it is estimated that there are no fewer than 4,000 tank-cars in the oil districts, constructed much like the water-carts used for watering the streets. There is a petroleum Exchange in nearly every large town in the oil district. Herr Hofer doubts whether petroleum will long continue to be so rich a source of revenue to the United States. He bases his opinion upon the ascertained fact that in Pennsylvania a well, no matter how abundant the flow of oil at first, does not yield for more than three years, and he says that all the northern part of the State was pumped dry in about ten years' time. Many other springs have been discovered in the southern part of the State, but they are gradually being worked out, and the yield of oil in Ohio, Virginia, Kentucky, Tennessee, and Canada is, on account of the high cost of production, comparatively small.

VENTILATION.

SIR,—A simple and effectual method of supplying fresh air without draft to a school-room, may perhaps be thought worth notice in the pages of the *Builder*. The details will be seen on reference to the accompanying small plan and section. It may be described as an air-box made of sheet-iron, and placed behind an ordinary Gill stove. The box is connected by an air-shaft with the outside wall, and has an inlet-pipe above, which admits the fresh air into the room. In passing through the "box" the air





becomes slightly warmed in winter, when there is a fire in the stove, and it is a good ventilating shaft in summer. It is most effective when it is most required, *i.e.*, when other openings, doors or windows, are closed. Its advantage over the old plan of a simple opening under the stove, is that there is no danger of dirt or ashes falling into it and filling it up. I may add that I designed it twelve months ago, for a Board School in Leicester, where it has been found to work admirably. W. JACKSON, Architect.

Tramways in Spain.—It appears that Mr. William Abbott is now in Spain with a view to pushing tramways there. Recently we heard of him at Liverpool, Hull, Belfast, Dublin, Swansea, and other points where economical steam traction on tramways is either being used or contemplated. He is now at Madrid, where, it appears, there are already two or three lines of tramway in operation. Tramways are also working at Barcelona. Spain is thought to present a good field for enterprise of this class, both as regards the establishment of fresh lines, and the introduction of steam on those already existing.

BRITTANY STONE MONUMENTS.

SIR,—About twenty years since my attention was directed to the stone monuments in the vicinity of Auray. I read the description of these relics contained in Higgins's "Celtic Druids," pp. lxxxvi.-lxxxviii. The description is extracted from "Monumens Celtiques" of M. De Cambray, and it includes four illustrations. According to De Cambray "this monument belongs, doubtless, to astronomy: it was a celestial problem, of which it is difficult to give the plan, or perceive all its bearings. Its position is from east to west, placed in eleven straight lines, 30 ft. to 33 ft. distant. The space between the stones in the lines varies from 12 ft. to 15 ft. I have measured the largest stones at Carnac; the most elevated are 21 ft. or 22 ft. above the ground. One of them is 22 ft. high, 12 ft. broad, and 6 ft. thick, exclusive of what is concealed by the sand." Mr. Higgins states that Carnac is a Celtic word, and that the stones referred to the zodiacal signs, as the ancient astronomers admitted eleven zodiacal signs, Libra being a Grecian addition or alteration in lieu of the Claws of Scorpio, which the Greeks transmitted to the Tail; thus making twelve signs.

More recent authors,—Weld, Mrs. Palliser, Lowth, &c.,—have described Carnac and other Brittany stone relics. The Rev. W. C. Lukis has issued (1875) a handbook or guide to the relics near Auray, which is exemplified by two maps or plans,—very useful for antiquaries.

In 1865 I hired a vehicle at Auray, when I visited Carnac, inspecting Mont St. Michel and the Menec lines, eleven in number, 1,125 yards in length. At that time the sepulchral cist, now closed, was shown on Mont St. Michel, and I inspected it. The guide then drove on to Plouharnel, stopping at the dolmen on the right of the road, and proceeding to the two dolmens, Roch Guyon, rather beyond. We returned to Auray, viewing the dolmens described by Mr. Lukis as Runusto, Grottes de Grionec, and Crucuny. But this is the ordinary guide's trip. In 1872 I remained several days at Carnac, when I saw the objects above mentioned, and also the stone rows at Kermario and Kerlescant, north-east of Mont St. Michel. The former are ten in number, and about 1,330 yards in length; the latter are thirteen in number, and form twelve avenues, "and of no great extent," now reaching about 325 yards in length. A circle, 100 yards in diameter, ended the lines at the west end. On the north side there was a barrow 100 yards long, with a high menhir at the west end. Mr. Lukis refers to another barrow, on the north of these lines, which is described in the Journal of the Brit. Arch. Assoc., vol. xxiv., pp. 40-5, with several engravings. During this visit I saw also St. Barbe Avenues, north-west of Plouharnel, three in number, the longest of which is about 450 yards. The tradition that these lines terminated in an inclosure of stones forming the segment of a circle is confirmed by an extant plan. I saw several dolmens to the east, including the large one at Courconno. Here two covering stones are visible, the largest of which is 22 ft. long. Near it, south-east, are the relics of a square of stones, about 100 ft. in length on each side,—a unique specimen. The dolmens of Mané-er-Groah (Hill of the Fairy) and Mané-Remor, mentioned by Mr. Lukis, are in this vicinity. Further north I inspected the stately avenues of Erdeven, composed of ten lines, extending originally about 2,300 yards. Two dolmens at Mané Bras, and one at Erdeven, north of the rows, are visible, and a menhir to the west. I saw also the two dolmens at St. Antoine, south-west of Courconno, which merit a passing visit, I think.

During my visit to Auray in 1865, I hired a vehicle, and inspected the stone relics at Loc Mariaker, described at length in Murray's "Handbook to Brittany," and also the chamber at Mané-er-H'roek, about half a mile south of Loc Mariaker. It was discovered in 1863,—12 ft. 8 in. by 9 ft. 7 in. in size. A report, by M. René Galles, of this relic, &c., has been issued. Roman tiles have been found near here, and it may have been the site of Dariorigum, or of some other Roman settlement. But, upon this second occasion, in 1873, I walked to Loc Mariaker and back, passing and inspecting several cromlechs or dolmens near Porhers, and Kerhan, and at Mein Drein. Upon this occasion I hired a boat, and reached Gavr'Innis

seeing the great cairn, enclosing the chamber and passage, discovered in 1832, with its sculptures. Mr. Lukis states the visitor will be struck with them, and by the three enigmatical circular holes hewn in one of the left-hand supports of the chamber, cupped as if intended to hold a liquid. He refers to stone relics extant on the adjacent isle of El Lanic, and he deems it probable that these isles were part of the main land. Mr. Lukis mentions also a dolmen near Auray, Kerhuen Tangui, in an orchard; its covering-stone is 22 ft. long by 11 ft. wide, with supports of considerable height. It is on the left of the road at Kerhuen Brigite, two miles and a half from Auray. In a tract Mr. Lukis describes the Kerlescant barrow at Carnac, with two engravings, and a sketch of the objects found in it. He has issued another tract, with three plans, descriptive of Brittany relics before mentioned, and including also some other relics which I saw in 1872, viz., a circle, and five lines of stones, at St. Pierre, Quiberon, the former 195 ft. in diameter. The stone relics in Belle Isle have vanished; but I saw there two menhirs. Mr. Lukis in one plan shows the lines at Kerlescant, Kermario, Menec, St. Barbe, Erdeven, and St. Pierre, with its circle, besides twenty-three dolmens, and the square at Erdeven.

The compiler of the "Handbook for France" (Murray) recommends, with reference to Brittany, the perusal of Souvestre's "Les Derniers Bretons," and the "Foyers Bretons," with Freminville's "Finistère and Morbihan." For the churches and Druidic remains, Merimée's "Notes d'un Voyage dans l'Ouest de la France," and Joannes's "Itinéraire de la Brétagne," are mentioned as useful. At Huelgoat I saw a large rocking-stone; and near Pol de Léon, not far from the road to Roscoff, on the left, several large dolmens, described in Weld's "Brittany."

In my notes upon the Roman Wall, p. 564, *ante*, I omitted to notice a stone relic which I saw near Haltwhistle, described in the Ordnance Map as the "Mare and Foal," in a field.

C. C.

ARCHITECTS AND PUBLIC COMPANIES.

Sir,—We have carefully perused the letter in your edition of the 24th ult. from a "Victim," and while sympathising with him in what is no doubt a very hard case, cannot help thinking that had he taken what most ordinary men of business would have considered ordinary precautions, a greater part at any rate of his loss might have been prevented. An architect with any experience of public companies would have seen that his appointment was regularly ratified by the board of direction, and long before the expiration of the two or three years' probable duration of the company referred to by your correspondent, would have had his fees paid, and thereby lessened his loss.

According to your correspondent's own account, he is as much to blame as any one else in allowing his name to be used upon a prospectus as an inducement perhaps for others to invest their money without having thoroughly investigated the matter, and it is this very carelessness which has brought that which should be (and in most cases is) a great public benefit into disrepute. There are, of course, sound and unsound public companies, as well as solvent and insolvent private businesses, and if people would only take the trouble to think, and make a few inquiries before entertaining any investment that is laid before them, half the losses would be avoided.

Manufacturing companies, as a rule, are safe and profitable investments, as in any case they give the investors an opportunity of judging the probable profits to be derived from the business, and common sense would teach us whether there is or is not a demand for the article manufactured. There can be no question that a great deal of money has been lost in public companies, but, on the other hand, vast sums of money have been made, and thousands of incomes augmented through their medium, and the majority of professional men have reason to be thankful for a system which brings so much capital into use which would otherwise remain unprofitable.

Investor.

Art at Manchester.—The Committee of the School of Art in Manchester are to hold next spring an exhibition of pictures, sculpture, and specimens of art workmanship, in aid of the building fund for a new School of Art. A large selection will be contributed from South Kensington, and the committee have already received promises of loans from private collections.

"OUR SCHOOLS OF ART."

Sir,—With your permission we will reply to "Andros." He informs you, sir, that we exhibit a "misapprehension of the subject." If "Andros" will condescend to accept a little information from us, we would advise him to read a few extracts from the addresses published by the Department of Science and Art by H. Cole, C.B., 1852; R. Redgrave, R.A., Superintendent of Art; Mr. Redgrave again, 1852; J. S. Howson, M.A.; Mr. John Ruskin, 1857; Earl Granville, 1857; the Right Hon. W. Cowper, M.P., 1857. In those extracts the noblemen and gentlemen preach art education pure and simple. We hope, for his own sake, "Andros" will not accuse the gentlemen named of a "misapprehension of the subject."

When we spoke of Schools of Art being established for design, and, if need be, for the education of artists, we took it for granted that "Andros" would understand that the same privileges were for the general public. "The teaching of design no doubt forms a part of the curriculum of such schools as are situated in centres where such studies bear upon the practical business of life." We should like to know if *no doubt* means trivial; we should also like to be informed what subjects are taught in Schools of Art not "situated in centres" without a *no doubt*; if design and other branches of art education are not taught in such schools, then building construction and orthographic projection must be, for these latter subjects are part of the stock-in-trade of the Department of Science and Art.

If a student wishes to study art as a profession, "Andros" has a doubt, he says, "whether it is *possible* or *desirable* to teach young men to be artists is *questionable*." To such a profound conclusion, in reply, it is not possible for the 393 persons holding the first certificate to teach either design or fine art. We know there are a few exceptions in the total stated who have studied art elsewhere. Perhaps the above conclusion is the reason 393 persons are trained at enormous expense not to teach art in any form, ornamental or otherwise. Well might the *Daily Telegraph* say, a few days ago, in an interesting leading article, "Our own national progress in art education has been so tentative and so shame-faced." We should be glad if the able writer of those words would examine the subject of the art-teaching in this country.

What we desire to go forth is, that the Department system has not done what ought to have been done with the many liberal grants of money entrusted to those who have had the spending of the £. s. d. Our impression is, that every school of art ought to have a master equal to the very few that have taken the highest artistic certificates. Perhaps the air at South Kensington is too frigid for so much fruit to grow, as the small plants are cultivated for the market instead. This may be the right way, and answer very well for the Blue-Book, but we make it a question. At the conclusion of our letter the readers of the *Builder* shall judge for themselves what a severe test the 393 persons had to endure before taking a school of art. The assertion of "Andros" that there have been masters holding many certificates so unfit for their duties that the "despised two-certificate men flourished and did good work" after the former masters had left, is a very serious accusation. From such an inference the Department pay training-masters to study for years without proving the teaching power of such men. Probably the Department can explain that little matter.

We can understand "Andros" to object to the suggestion in our former letter, that committees should see every applicant's work in the fine arts before making an engagement. Is "Andros" afraid with his first and sixth? Courage, "Andros." The "comic scenes" that our friend conjures in his playful imagination would be seldom witnessed among clergymen, medical men, manufacturers, and leading tradesmen: they are keen and shrewd men of business, which, we believe, most masters very soon find out. If there are as "many flaws in our system of national art education" as the observant "Andros" states, why do the masters not come forth and point them out, and not leave the work to be done by those that apparently follow a crafty defunct minister's safe advice? We hope "Andros" will credit us with a little more information in this letter than the jaunty conclusion of his interesting epistle intimates. We know all we require for our purpose, and in conclusion we append the following:—Candidates must be prepared,—(*a*) to instruct a class in the presence of the examiners, in freehand drawing, geometrical drawing, perspective, and model drawing; (*b*) sketch in a given time a group of models; (*c*) solve on paper questions in geometry, perspective, and elementary architecture. In addition, the following works are also required:—Stage 1*a*, a sheet of geometrical problems; stage 1*c*, a sheet of perspective diagrams; stage 1*d*, a sheet of architectural details; stage 2*b*, a sheet of diagrams, showing the application of the principles on which foliated design is constructed; stage 3*b*, an outline of ornament in low relief from the cast; stage 5*a*, a sheet of drawings of models, shaded; stage 5*b*, a sheet of ornament from the cast; stage 6*a* or 8*a*, an outline from the figure, from the flat or *round*; stage 10, a sheet of foliage drawn from Nature; and, finally, a sheet of flowers painted from the flat.

A. B. & C.

New Science and Art School, Newcastle-on-Tyne.—The foundation-stone of the new Science and Art School, Corporation-street, Newcastle, was laid on the 21st ult. by Mr. Cowen, M.P. On the ground-floor the building will contain hat and cloak rooms, lavatories, students' latrines, store-rooms, and other accommodation, with covered playgrounds. Upon the first floor will be the lecture-hall for science subjects, and also several large science class-rooms. On the second floor the rooms are to be devoted to art students, separate apartments being provided for the junior and senior divisions, as well as private rooms for the headmasters, and a place for arranging the philosophical instruments. The chemical and physical laboratories will be placed on the third floor. For the purpose of supervision, glazed partitions are to be largely introduced in the interior, instead of the ordinary division walls. The contract for the whole of the work has been placed in the hands of Mr. H. Atkinson, Blaydon, and Mr. T. Oliver, Newcastle, is architect.

TEMPLE BAR.

Sir,—Allow me to offer you a suggestion in reference to the disposal of the last of our ancient City gates, viz., Temple Bar. I have not seen, in all the correspondence in reference to the future of the above, the idea thrown out that it might be very well utilised as a water-side entrance to the Temple and gardens from the Thames Embankment. If the stonework were carefully taken down and refixed central with the gardens, and, of course, in line with the iron palisading, and the respective archways filled in with suitable ornamental iron gates, as entrances for carriages and foot-passengers, it would form a nice feature on the Embankment, and still retain its old associations with the Temple. The room over might be used as a shelter for garden and gate keeper.

J. B.

At the meeting of the Court of Common Council, on the 29th ult., Mr. Bedford moved,—

"That it be referred to the City Lands Committee to remove Temple Bar, but that before disposing of the Bar it be an instruction to the committee to consider whether some spot cannot be found, either within the City boundaries, or on some beautiful portion of the land held by the Corporation in trust for the people, on which that time-honoured memorial of the city of London may be preserved for the respect and admiration of future generations."

Mr. Edmeston seconded the motion.

Mr. Alderman Sidney said that by adopting the motion they would cover themselves with ridicule. Were they prepared to spend 20,000*l.* upon so absurd a project, for that was the sum it would cost?

Deputy Fry said some of the difficulties in the way of adopting the motion would be removed if the committee were instructed to proceed with the work forthwith.

Mr. Rudkin thought it would be better to take the Bar at once to Epping Forest.

After observations from Deputy Lowman Taylor, Mr. Coles, Mr. Beck, and other speakers, the resolution, with Deputy Fry's suggestion incorporated, was carried *nem con.*

The City Lands Committee, at a meeting held at Guildhall on Tuesday, gave instructions to the City Architect to forthwith cause Temple Bar to be pulled down, and removed to vacant land in Farringdon-road. The external stones are to be numbered, with a view to the Bar being reconstructed on some site to be decided on by future vote of the Court of Common Council.

STAINED GLASS.

Norwich.—Two stained-glass windows have just been placed in the chancel of Christ Church, Eaton, Norwich, to the memory of the late vicar, the Rev. Frederick Weston. The windows were designed by Mr. Augustus E. Browne, architect, and executed by Messrs. Heaton, Butler, & Bayne.

Northleach.—A stained-glass window has recently been placed in the chancel of Northleach Church, as a memorial to the late Rev. W. Price, who was upwards of fifty years rector of the parish. The designs are in three compartments: the centre one the Crucifixion, the others the Resurrection and Ascension. The four Evangelists are placed above. The window has been executed by Messrs. Jones & Willis.

Edinburgh.—An addition has been made to the decorations of the restored portion of St. Giles's Cathedral, Edinburgh, in the filling with stained glass of the great east window, the gift of Lord Provost Falshaw. This large and important work, just completed by Messrs. Ballantine, was publicly inaugurated on the 3rd ult. The window, 40 ft. in height, is divided into under and upper tiers of five lights each, terminating at the top in flowing tracery. In the lower lights has been placed the "Crucifixion," the subject being carried out in groups of large figures, extending across the whole width of the window. The five upper lights are occupied with the "Ascension." Designed by Messrs. Ballantine, the work has been carried out under the supervision of Mr. R. Herdman, R.S.A.

Tadcaster.—A stained-glass window has just been placed in the north aisle of Tadcaster Church, by Mrs. Bradley, in memory of her late husband. The subject is the three Marys at the Tomb and the Resurrection. The artist is Mr. Constable, of Cambridge.

Stoke-upon-Trent.—Two more Munich windows, consisting of a three-light, representing in the centre the Ascension, with the descent of the Holy Ghost and our Lord walking on the Sea of

Galilee on either side, and a two-light containing the Raising of Lazarus, have just been added to the church. These, as well as all the other windows in the church, have been executed by Messrs. Mayer & Co.

TUBE WELLS.

AT a meeting of the Society of Engineers, held December 3rd, in the Society's hall, Victoria-street, Westminster, Mr. Thomas Cargill, C.E., president, in the chair, a paper was read by Mr. Robert Sutcliff, on "Tube Wells for large supplies and in various Strata." This paper was supplementary to one read at the previous meeting of the Society, on "Tube Wells," by Mr. Le Grand, which dealt with the subject of tube-wells (commonly known as Abyssinian) of small size. Mr. Sutcliff, in his opening remarks, observed that in laying down plant for obtaining large supplies of water, a number of tube-wells were coupled together by horizontal mains, so that one pumping-engine drew from many tubes. In this way, for the last eight or nine years the leading breweries at Burton-on-Trent have obtained the bulk of their water-supplies. Messrs. Allsopp & Sons pump 600,000 gallons daily from thirty 3-in. wells, and Messrs. Bass & Co. 500,000 gallons from twenty-five tubes. Thus in one town two breweries are obtaining sufficient water for a town of 40,000 inhabitants. Although some of these Burton wells are within a stone's throw from the Trent, the quality, level, and temperature of the water differ from those of the river water. The town of Carmarthen, in Wales, is supplied by ten 2-in. tube-wells. In sandy soils strainers or filters are used, which prevent sand coming into the tubes. A tube-well was sunk in a very fine sand at Chislehurst by pumping up six barrow-loads of sand, and replacing it with gravel. One advantage of the gravel filter is its imperishability, and if made sufficiently large the velocity of the water is not sufficient to bring the grains of sand within the area acted upon by the pump. The author observed that in rocks and other hard strata the method of sinking tube-wells was similar to that employed in making artesian borings, but the mode of pumping and development of supply was entirely peculiar to the tube-well system. Bored tube-wells can be made through any stratum and to any depth that an ordinary artesian boring can reach. The Lower Grounds, Birmingham, with their ornamental waters, fountains, and extensive gardens, derive their entire water supply from a single 5-in. well sunk to about 200 ft. deep. By means of this well an annual saving of 300*l.* for water-rate is effected. Two tube-wells at West Thurrock yield a daily supply of 220,000 gallons from the chalk. In conclusion, the author observed that it was said that the first tube-well was a pointed bamboo driven into the earth, and the pump a "nigger," who sucked the water through the pores of the cane. Now, said Mr. Sutcliff, factories, breweries, and towns derive from them enormous supplies, and it is possible that coupled tube-wells in the chalk may solve the problem of providing London with pure water. We should think not.

WAREHOUSES, ALDERSGATE STREET.

SIR,—In the description of the three warehouses in Aldersgate-street, illustrated in your issue of the 17th ult., it is stated that the centre portion of the block was erected for Mr. F. H. Ayres, and the remainder let to various tenants, the builders employed being Mr. E. King, Messrs. Williams & Son, and Mr. Rose.

As this statement is calculated to convey a wrong impression of my position in connexion with the property, will you kindly allow me to say Messrs. Lander & Bedells were employed by me to design the two warehouses on the right and left of centre, and of which two warehouses I am the owner, and by an arrangement the centre building for Mr. Ayres was erected by me at the same time in conjunction with my own.

EDWIN KING.

A Workmen's Hall at Cowfold, Sussex.—Messrs. Longley Brothers, of Henfield, who have kept the store used by the men employed in the erection of the Monastery at Cowfold for the past twelve months, have just had a commodious stone building erected, which they designate a Workmen's Hall, at which refreshments and non-intoxicating drinks will be retailed, while chops and steaks can be had to order. After six p.m. the restaurant is available as a free reading-room, being well warmed and lighted, and supplied with newspapers and periodicals, &c.

GRANITE MONOLITHS.

SOME owners of granite quarries and works are not satisfied to let the statement made by Mr. Godwin, on the occasion of Dr. Birch's lecture, to the effect that the London Committee for erecting a memorial of the late Prince Consort did not find themselves able to recommend the adoption of a granite obelisk, on the ground of uncertainty, pass without comment. Messrs. Freeman & Sons, of the Penryn Granite Works, have sent us copy of their correspondence with the committee, showing that they answered all the questions put to them excepting the question of price. The statement was perfectly correct, and this very omission on the part of Messrs. Freeman serves partly to explain it. Messrs. Freeman add, and we are quite willing to believe them:—

"Since 1862 our quarries have been largely developed; we have more than sixty quarries in this district of fine regular-grained grey granite. Many masses of solid rock have been quarried, having dimensions large enough to make needles from 40 ft. to 85 ft. in length. It is by no means an infrequent occurrence to throw over rocks containing from 800 tons to 1,500 tons. We shall be much obliged if you will give these facts publicity. We are quite ready to join with the rest of the world in admiring the wonderful works of the ancient Egyptians, and do not pretend to vie with them in magnitude, but we think that it is only right that the real capabilities of modern times and English quarries should be known. We have raised and polished columns 30 ft. in length and 20 tons in weight, and pedestal blocks 40 tons in weight, and would not hesitate to undertake works of far greater magnitude, such as the production of a needle from 60 ft. to 80 ft. in length."

THE CAMBERWELL WORKHOUSE COMPETITION.

SIR,—I am very pleased to see that several gentlemen have taken up the cause of the much-injured author of the design marked "The Poor you have always with you."

It appears to me that the Board of Guardians commenced the business in a very improper way, as for a work of such importance the very best talent should have been secured, either by selecting a few experienced architects to compete, or by open invitation through your columns. Instead of this, the whole matter was kept quiet, and two or three local practitioners alone asked to compete. I never, to my knowledge, saw either of the competitors named in your last issue. But, living on the boundary of the parish, I have been enabled to form an opinion from reports in local newspapers and current conversation that the decision was most unfair.

FAIR PLAY.

MAIDENHEAD HOSPITAL COMPETITION.

SIR,—About eighty designs were submitted in this competition, and the Town Council appointed five members to form a committee to select five plans for the final decision of the whole body. The design eventually selected was found to be the work of a local architect, and it is a singular fact that three members of the sub-committee are builders, and one of them, the ex-Mayor (Mr. Woodbridge), has at least two jobs in hand for this local architect.

A COMPETITOR.

CHURCH-BUILDING NEWS.

Langport.—All Saints' Church, Langport, Somerset, has been re-opened for use, after restoration under the superintendence of Messrs. Foster & Wood, of Bristol, the builder being Mr. Davis, of Langport. The roof of the nave has been altered to what is thought to have been the original form,—moulded pitch pine ribs having been placed longitudinally and curved ribs the transverse way, to form panels and carved bosses placed at each junction. The north and south aisle roofs have been taken off, and the old lead recast and used again. These roofs are of pitch pine, being formed of massive beams and rafters. The roof of the north chapel has been carefully restored in old oak, to match the old work. Mr. Vincent Stuckey has given a stained window in memory of his mother,—Mrs. John Wood. The stained window which was in the north chapel, in memory of the Mr. Vincent Stuckey who founded Stuckey's Banking Company, has been taken out and placed in the south chapel. The west window of the tower is to be filled with stained glass, in memory of Mr. Walter Bagehot, editor of the *Economist*. The church is heated with hot air, the apparatus for which has been fixed by Messrs. Haden & Sons, of Trowbridge. The organ, which is new, was built by Messrs. Hill & Sons, of London. The total cost has been about 2,250*l.*

Edinburgh.—Trinity College Church, Edinburgh, the erection of which was commenced some six years ago, has been re-opened. The building is seated for 900 persons, and has been erected at a cost of nearly 10,000*l.* As originally framed by Mr. Lessels, the plans embraced in the details features borrowed from the interesting old edifice which the church was designed to replace; but before the work was fairly begun it occurred to some of those charged with the carrying out of the undertaking that a considerable portion of the ancient structure might be actually reproduced in connexion with the new one. Mr. Lessels accordingly modified his plans so as to give effect to this idea, the method adopted being to put down at the back of the new church what may almost be regarded as a distinct building, constructed of the old stones, and preserving some of the finest portions of the original structure. Internally, the two are only separated by a partition, the lower part of which is of wood, and the upper portion of glass; and the annexe, which affords accommodation for 200 or 250 sitters, is to be used for mission, Sabbath school, and other similar meetings. The church proper is an oblong building, with its front and main entrance towards Jeffrey-street, and one side abutting on Chalmers-close.

Langthorne.—A new church for the hamlet of Langthorne has just been consecrated by the Bishop of Ripon. The church was built almost at the sole cost of the Rev. T. Melville Raven, vicar of Crakehall and Langthorne, from designs by Mr. C. Noel Armfield, of the firm of Messrs. Armfield & Bottomley, architects, Whitby. The whole church is decorated with colour, and furnished with embroideries, all from special designs by the architect. The altar frontal is the gift of Mrs. John Raven, widow of the late landscape artist, John Raven (brother of the munificent builder of the church).

Rainford.—The foundation-stone of a new parish church for the village of Rainford, near Liverpool, was laid on the 1st ult. The new edifice, to be called All Saints' Church, is being built in the semi-Gothic style of architecture, its total length being 113 ft. 6 in., by 48 ft. 2 in. wide, and the total height of the nave 46 ft. to the pitch of the roof. The church is divided into nave, chancel, and two aisles, the former of which is 77 ft. long, the chancel being 31 ft. deep by 19 ft. wide. It is being built of Runcorn stone, dressed with local wall stone relieved with red stone bands. At the north-east corner of the building is the tower, which is 18 ft. square at the base, but at present will only be carried to the height of 26 ft. The building will be seated with open benches, seating 550 persons. The architects are Messrs. Aldridge & Deacon, of Liverpool, the clerk of works being Mr. F. Hulme, of Stockport, and the contractor Mr. Hugh Yates, of Liverpool. The estimated cost is 5,449*l.*

Diss.—The restored chancel of Diss Church has been reopened for use, after restoration and decoration from plans by Mr. A. E. Browne, architect.

Shrewsbury.—The opening of the chancel of the new church of All Saints, Castle-fields, Shrewsbury, was opened on the 7th ult., the nave having been opened a year ago. The chancel, which is 40 ft. internally by 25 ft. wide, and about 52 ft. high to the ridge, is raised three steps above the nave, and furnished with oak stalls for a choir of twenty-eight men and twenty boys; there is a gradual ascent of six steps more to the altar. The chancel is paved with Maw & Co.'s encaustic tiles, and is warmed by one of Rimington's underground hot-air stoves. Red-hill stone has been used for the walling, Greenshill and Shelvoke for dressings, and blue Pennant (Bristol) for shafts. The walls are pointed internally, not plastered. The open-timbered roof is of pitch-pine, boarded between rafters, and covered with Mr. J. Parson Smith's patent pressed Ridge-hill tiles. The stone carving was executed by Mr. R. L. Boulton, of Cheltenham. The contractor for the chancel, with north chancel aisle, organ-chamber, and vestry in tower, is Mr. W. Bowdler. The chancel roof and choir stalls were entrusted to his late partner, Mr. H. T. Darlington. Messrs. Alltree & Lea undertook the lighting. The total cost of the chancel, when the contract is completed, will be about 2,400*l.* The architect is Mr. E. Haycock, of Shrewsbury.

Sheffield.—The parish church of Sheffield is about to undergo alteration and enlargement, from the plans of Messrs. Flockton & Abbott, architects. The main features of the alteration are the extension of the nave and aisles westward a distance of 30 ft., adding two bays to the arcades; the addition of a large and lofty south porch, and south and north transepts; the throwing open of the chancel to the church by the removal of the screens now filling two of the arches; the removal of the organ, and of all the galleries. Arrangements will be made for accommodating the choir in the chancel. When the alterations are carried out the building will be, in the interior, 165 ft. long from east to west,

and 98 ft. wide from north to south across the transepts. The four pillars and arches of the tower will be left entirely free, adding much to the imposing appearance of the interior. The space gained by the enlargements and the connexion of the chancel with the church will fully compensate for the loss of the galleries. Externally the old tower and spire will remain untouched, but otherwise the architectural character of the whole of the exterior of the church will be changed, and from being a plain, formal, square building, it will be broken up in a bold and effective manner. The style adopted for the additions is Late Decorated. Towards the cost, Mrs. Thornhill's magnificent gift of 10,000*l.* has been supplemented by an undertaking on the part of Mrs. Sam. Parker to expend 2,500*l.* on the north transept in memory of her late husband, and a promise of 1,000*l.* from Mr. Mark Firth for the cost of the new south porch. A handsome font the gift of the Freemasons, will be placed near the southern entrance.

DISSENTING CHURCH BUILDING NEWS.

Conisborough.—On the 8th ult. a new Wesleyan Chapel at Conisborough was opened for service. The new chapel has been erected from the designs of Messrs. Dixon & Moxon, of Barnsley. Messrs. Downing & Twiby, of Conisborough, did the brick and stone work, and Messrs. J. Appleyard & Son, of Rotherham and Conisborough, the woodwork, plumbing, glazing, gasfitting, &c. The contract with Messrs. Downing & Twiby was for 1,209*l.*, and with Messrs. Appleyard & Son for 1,600*l.* Subsequently the plastering work was given to Mr. Gummer, of Rotherham, and the slating to Mr. Gregory, of Doncaster. The total cost of the building is estimated at nearly 4,000*l.* The chapel provides accommodation for 530 persons. It is described as being in "no particular style."

Leytonstone.—On the 1st ult. the memorial stone of a new Baptist Chapel, at the corner of Fairlop-road, Leytonstone, was laid by the Rev. A. G. Brown. The new chapel is designed to accommodate 400 people, and further accommodation for 300 more can be furnished by the provision of side galleries when needed. The scheme will also include a schoolroom for 120 children, but a space is reserved for larger and detached school and lecture-hall at a future time. The cost of the chapel and temporary schoolroom will be about 3,500*l.* The architect is Mr. James Cubitt.

Grimsby.—The new Baptist chapel in Victoria-street, Grimsby, was opened on the 6th ult. It has been built by Mr. John Brown, of Grimsby, in accordance with the plans prepared by Mr. Glover, architect. The style adopted is Romanesque, and the materials are red brick, relieved with black brick bands, and Bath stone dressings. The principal features of the front are two towers, with steep slated roofs, angle turrets, and pinnacles; these are 73 ft. high from the pavement. Between them is the recessed central gable, with a large traceried rose-window, and below it, projecting nearly to the front of the towers, under a smaller gable, is an open portico with two archways. The chapel will accommodate 1,100 persons, without reckoning seats in the aisles, or standing-room. There are six external doors to the building and four staircases to the galleries.

Guernsey.—The foundation-stone of a new Wesleyan Chapel has been laid at Guernsey. The building, which is to cost 5,000*l.*, is being carried out from the designs and under the superintendence of Messrs. Wilson, Willcox, & Wilson, architects, Bath. Mr. D. C. Jones, of Gloucester, is the builder.

VARIORUM.

In the December number of the *Nineteenth Century*, Mr. Godfrey Turner strikes a good blow, under the heading, "Amusements of the English People," in favour of that movement for obtaining a theatre not wholly governed by the prevailing popular taste, which was initiated some few years ago by Mr. George Godwin, and followed up by Mr. J. R. Planché and Mr. Tom Taylor. Mr. Turner says, after an account of the condition into which the stage has been brought,—"It is my contention, practically weak though it may prove in any possible result, that the remedy for what is mostly wrong about our popular amusements must be between rulers and ruled. A State subvention secures the theatre which enjoys it against departure from a standard and a plan."——The *Belgravia Annual* for 1877 (Chatto & Windus) is a good specimen of its class. The December *Belgravia* ends the year well.——In the new number of the *Gentleman's Magazine* (from the same publishers) Mr. Justin M'Carthy concludes his capital story, "Miss Misanthrope."——The *Victoria Magazine*, conducted by Miss Emily Faithfull, keeps steadily in view its main objects, Woman and Woman's work. The magazine must give more matter, however, if it hope to run against similar periodicals.——The new part of "Picturesque Europe" deals with the Lake Country and South Wales, and has its usual number of excellent engravings. It includes a view of Brantwood, Coniston, the residence of Mr. Ruskin.——We have before us a handsome and charming book, "The Great Painters of Christendom,—from Cimabué to Wilkie," by John Forbes-Robertson, just now published by Cassell & Co. We shall review it before long; but, meantime, mention it for the benefit of such of our readers as are looking for a present-book, which is much more than a mere ornament for the table.

Miscellanea.

A Needed Improvement Deferred.—At the last meeting of the Holborn District Board of Works, Mr. S. W. Hopwood, the clerk, read two letters referring to the proposed new thoroughfare from King's-road, Holborn, to Clerkenwell. One was from the Vestry of Islington, stating that they concurred with the views expressed by the Holborn District Board, that there should be an improved road communication from Gray's-inn-road, at its junction with Liquorpond-street to Clerkenwell and Islington, and that they would co-operate with the other parishes to secure the improvement. The other was from the Metropolitan Board of Works, acknowledging receipt of communication from the District Board asking, under the Metropolitan Streets Improvement Act for the new street above mentioned; also for accommodation for dwellings for the working-classes on the ground already and purposed to be acquired; and stating that that Board had arrived at the conclusion that it is not advisable to take any action upon these subjects during the ensuing session of Parliament. All who have experienced the perils of the present route *vid* Elm-street, Mount Pleasant, and Coldbath-fields, will be glad to know that the representatives of Islington, Clerkenwell, and the Holborn district are taking steps to urge upon the Metropolitan Board the imperative need of the proposed improvement.

Roman Remains at Chichester.—Sir: Can any of your readers give further information as to a Roman inscription found in 1809, at Chichester, and in which the letters remaining were:—

M
NVSAT
ARIVS
LXXXV

This is evidently the right-hand portion of a Roman tombstone. Dallaway, in his "History of Western Sussex," vol. i., page 5, says:—"At the same time was found a fragment of a miliary column of granite, but too much obliterated to be deciphered." Any information as to the whereabouts of either of these stones, or a copy, as far as the letters are visible, of the inscription upon the miliary, will be gladly accepted, and, in fact, considered as a boon by antiquaries.—W. Thompson Watkin.

Adventures of an Inscription.—There was an old house in Brighton which for many years had a Latin inscription in raised Roman letters, which, in consequence of the action of the weather, underwent a variety of vicissitudes. First, the inscription seems to have been "Excitat acta robur" (Strength awakens action—that is, a consciousness of power rouses men to action). This became changed to "Excitas actis robur" (Thou awakenest strength by deeds). Again, this became changed to "Excitat actis robur" (He rouses to strength by acts). Again came another change, "Excitas acta robur" (Thou wakest, or excitest, to deeds of action, O strength!). But its last appearance defied all efforts at translation,—"Excitus ecta ropat," and as it only excited ridicule, it was entirely obliterated.—*Leisure Hour.*

The Masons' Strike in London.—The masons on strike would appear to be getting the worst of their conflict with the masters. On the 24th ult. the Strike Committee issued an appeal to all the trade unions of the country, asking for support to enable them to defeat what they call the "unpatriotic" conduct of the masters in importing foreign workmen. At a general meeting of the men on strike, on the 29th ult., the following resolution was adopted:—

"That we deem it advisable to rescind the resolution passed in this hall on August 16, in reference to sub-contracting, and that we allow our members to work for sub-contractors finding their own stone, who are paying 10d. per hour, according to our local rules."

The large contingent of German masons, whose arrival we noted last week, is said to be turning out very satisfactory work. Twelve more German masons, paying their own expenses, arrived on Tuesday, and more may be expected, as work is said to be very slack in Germany.

Serious Accident to a Dock Wall.—On the 20th ult. an accident occurred at the new dock works, Bootle, which will cause a large number of men to be thrown out of work, probably for some months. It appears that, during the previous fortnight, the men working under the contract for the excavation of the new dock works have experienced great difficulty, in consequence of large quantities of water oozing through a temporary wall, on the north side of the Canada Half-tide Dock. On the date named the breach in the bottom of the wall became more enlarged, causing large volumes of water to force its way into the new dock works, and cover the whole of the working plant. Large bodies of workmen were at once employed, and were occupied during the night in filling in with ballast the half-tide basin near where it was supposed the opening in the wall had taken place, but their efforts were unavailing, as the new works, covering some acres of land, were completely deluged with water, in some places to the depth of 10 ft. or 12 ft. Shortly after four o'clock on the 25th ult. a quantity of earthwork, over which the tramway was conveying the earth from the works, collapsed, carrying with it the metals and a wagon. With as little delay as possible Mr. Sutcliffe, the engineer's deputy, set to work, and had it filled in with ballast. Mr. G. F. Lyster, engineer to the Dock Board, and his son were upon the spot shortly afterwards; but the water had gained a complete mastery, and there will probably be a breach in the wall which will cost the Dock Board months of labour and thousands of pounds to make good. The primary cause of the accident is supposed to be that the excavations were made too near the temporary wall, for the purpose of putting in the masonry for some gates which were required. This was the only entrance to the docks in course of erection, and the excavations having gone below the old masonry, the water has worked underneath till it has made the breach spoken of. Some 42 acres of excavation have been covered with water, and 1,700 men are thrown out of work.

Extension of Wholesale Fish Market Shudehill, Manchester.—The Markets Committee of the Manchester Corporation invited four Manchester architects in the early part of this year to send in competition drawings under motto, and ultimately selected the designs of Messrs. Maugnall & Littlewoods out of the four for adoption. The plot of land for the site adjoins the present wholesale fish-market, and covers an area of 1,996 square yards. It is bounded by New High-street, Thomas-street, and Little Stable-street. About 500 square yards of the plot are to be utilised for shops and offices, which will front Thomas-street, leaving a net area of 1,500 square yards for the extension of the wholesale fish-market.

Fatal Accident to a Builder.—On the 22nd ult. a fatal accident occurred in High-street, Burton-on-Trent, which resulted in the death of Mr. William Lowe (of the firm of Lowe & Sons, builders), who was a member of the Burton School Board and a Town Commissioner. It appears that at about three o'clock in the afternoon of the day named the deceased was driving from Ashby-road to his business in the town, and, upon turning into High-street, a pair of runaway horses approached him; he drew up on his right side, and the runaways ran into his trap, threw him out, and the fall was such as to so seriously injure his head that he died in about eight hours afterwards. Mr. Lowe was in his fortieth year. His funeral was largely attended.

Cranbrook and Paddock Wood Railway. The agreement providing for the working of the Cranbrook line by the South-Eastern Company, at fifty per cent. of the gross receipts will be immediately taken in hand, and this will render the undertaking a promising one for the shareholders, for whatever may occur, they are certain to receive some dividend, as fifty per cent. of the gross receipts will be available for division among them. Thus, if the gross receipts equal 14*l.* per mile per week, a moderate estimate, the Cranbrook Company's proportion will be over 4,800*l.*, or nearly five per cent. on the whole share capital. A meeting of the directors was held last week, when it was decided that, considering the satisfactory state of the agreements with the South-Eastern Company, and also the forward condition of the land arrangements, the engineers should be instructed to commence the setting out of the line as soon as possible.

Public Loans to Local Authorities.—The Local Government Board has issued a circular drawing the attention of the local sanitary authorities throughout the kingdom to the 13th section of the Public Works Loans Act, 1875 (38 & 39 Vict., cap. 89), which requires that all local authorities intending to borrow from the Public Works Loan Commissioners should send to the Commissioners, on or before the 31st of December next, a statement of the new loans or instalments of loans already granted which the authorities may probably apply to borrow during the ensuing financial year, viz., that commencing on the 1st of April, 1878. Unless this condition be satisfied, the Commissioners are not empowered, except with the permission of the Lords Commissioners of her Majesty's Treasury, to make an advance under the Act.

Silversmith's Work.—The Council of the Society of Arts offer the sum of 100*l.* (placed at their disposal by Messrs. Watherston & Son), together with the Society's Medal, for the best Essay on the Art of the Silversmith, past and present, of all nations, with practical suggestions for its future development. We hope some of our readers will go in for it. The essay, it is understood, must be historical as well as practical, and should point out the *chefs d'œuvre* produced in various countries. It is necessary that the obstacles which have tended to retard the progress of the art in England should be set forth with a view to their removal, and that suggestions should be made for improvements in the various branches of the art. The names of the judges are to be published hereafter.

Death of the Borough Engineer, Portsmouth.—The death is announced of Mr. Joseph Edmund Greatorex, the borough engineer of Portsmouth, who had only just returned from a short holiday. He was suffering from a cold, which resulted in congestion of the lungs, to which he succumbed on the 26th ult. The deceased was elected borough engineer in 1866, having for fourteen years previously held a similar appointment at Coventry, during which period the city was drained under his supervision. During Mr. Greatorex's residence at Portsmouth the subsidiary drainage has been carried out, many roads and streets have been put in repair, and other works of importance devised and executed.

A Plantagenet Tomb.—"Langley Regis" writes:—"Allow me to explain that the remains recently discovered in King's Langley Church are believed to be those of Edmund de Langley and not his twin-daughters as stated, but his wife, Isabel of Castile, and their daughter Constance. The subject is undergoing investigation, and much interesting matter in reference to it may be expected to appear before long. The discovery is of a singularly interesting nature, especially when we bear in mind that Edmund de Langley,—the fifth son of Edward III. and founder of the House of York, as John of Gaunt, the fourth son, was of the House of Lancaster,—was a direct lineal ancester of her Majesty the Queen."

"Tower Bridge." — Among the Parliamentary plans deposited are two proposals for relieving the traffic north and south of the Thames,—the widening of London Bridge, and the erection of a bridge at the Tower. The former is deposited by the City Architect, and the latter by Messrs. Le Fevre & Co. The bridge at the Tower is to consist of five spans or openings,—one span 200 ft., 30 ft. clear headway; two spans 150 ft., 28 ft. clear headway; two spans 110 ft., and 25 ft. clear headway.

Postal Regulations. — An official letter dated the 31st of October last has been sent from the General Post-office to the Advertisement Manager of the *Times*, by whom it is freely circulated, informing him in reply to his inquiry that "Letters addressed to *Initials or Fictitious Names* are *not* now *taken in* to be called for at any Post-office, but are at once sent to the Returned Letter Office for disposal." Our own Publisher wrote to the Secretary of the Post-office upon the same subject on the 21st of November, and has since been informed, also *officially*, that Letters addressed to Initials or Fictitious names *are* now taken in to be called for at *some* Post-offices. For the convenience of those persons who are obliged to make use of initials for advertising purposes, it would be better either to rescind the regulation altogether, or to carry it out in its integrity, as the public, who have been informed of the *rule*, but not of the *exceptions*, are hardly likely to reply to advertisements so addressed.

Ornamentation of Paris.—The Fine Arts Department in the city of Paris has under consideration (according to *Galignani*) a plan for adorning the promenades and open spaces, down to the smallest squares, in a way similar to what has been done in parts of the Park Monceau. The idea is to place, at certain distances, busts of all the historians who have left studies of the manners and customs of the capital, in the great avenues,—such as the Champs-Elysées, the Avenue du Bois de Boulogne, &c. In the squares will be erected statues of notable personages, provosts of the guilds, judges, soldiers, &c., of all periods who have in any way illustrified Paris. Finally, in the large spaces, such as the Bois de Boulogne, the Buttes-Chaumont, and Montsouris, groups will reproduce historical events which have occurred in the city from the most distant times to our days.

New Harbour for Boulogne.—A commission of eleven has been appointed by the Chamber of Deputies to report on a scheme for the construction at Boulogne of a new harbour, to be accessible to large vessels at all times of the tide. The projected works are estimated to cost 17 millions of francs (680,000*l.*), which are to be advanced to the Government by the Chamber of Commerce at Boulogne, at 4 per cent. interest, repayable by thirty half-yearly drawings. The draught law proposes authorising the Chamber of Commerce to contract a 6 per cent. loan. The difference between 4 per cent. paid by the State and 6 per cent. paid by the Chamber of Commerce will be raised by harbour dues.

New Parsonage-house, Aston Brook.—The foundation-stone of a new parsonage-house at Aston Brook, near Birmingham, was laid on the 27th ult. The site of the building is in Sutton-street, a short distance from the church, and is nearly a quarter of an acre in extent. The house will be Gothic in style, and built of brick, with stone sills and strings. Mr. J. A. Chetwynd is the architect, and Messrs. Baxter, of Sparkhill, the builders.

TENDERS.

For roads and sewers on the Addison Park Estate, for the Midland Land and Investment Corporation, Limited:—

Maxwell	£25,025 9 4
Currall & Lewis	24,279 15 0
Mears	22,820 0 0
Josolyne	22,400 0 0
Nowell & Robson	22,090 0 0
Marshall	22,000 0 0
Young & Co.	21,399 0 0
Williams, Son, & Wallington	19,900 0 0
Wilson	19,700 0 0
Keeble	19,457 0 0
Quinn & Co.	19,400 0 0

For Stamford Brook roads, for the Metropolitan Board of Works:—

Downs & Co.	£6,360 0 0
Pearson	6,340 0 0
Young & Co.	5,200 0 0
Williamson & Walington	4,750 0 0
Webster	4,867 0 0
Mowlem & Co.	4,850 0 0
Nowell & Robson	4,685 0 0
Young	4,450 0 0
Batch	4,400 0 0
Dove, Brothers	4,333 13 9
Dunmore (accepted)	3,978 0 0

For making a new approach-road, with timber bridge, &c., to the Convalescent Hospital, at Cheadle. Messrs. J. & P. Higson, engineers:—

Smith	£2,284 4 0
W. & J. Worthington	1,108 10 0
Genney & Smith	1,099 0 0
Cordingley & Stopford	1,063 0 0
Haughton	999 0 0
King	920 0 0
Flavin	901 15 7
Burrows	875 8 6
Lowe	766 0 0
Braddock (accepted)	760 2 3

For paving, West Ham district. Contract No. 1. Mr Lewis Angell, engineer:—

Booth & Wheeler	£2,235 3 4
Casselton, Brothers	2,152 2 6
Knight	2,108 18 9
Rutty	2,074 0 0
Turner (accepted)	2,055 10 0

For new vagrant wards, on the cellular plan, for the guardians of the poor of St. Mary Abbotts, Kensington. Messrs. A. & C. Harston, architects:—

Holland	£5,571 0 0
Nightingale	5,385 0 0
Hewton & Griggs	5,335 0 0
Hunt	5,286 0 0
Downs	5,160 0 0
Cowland, Brothers	5,084 0 0
Tarrant & Sons	4,999 0 0
Palmer	4,899 0 0
Josolyne	4,703 0 0
Nash	4,700 0 0
Lathey, Brothers (accepted)	4,620 0 0

For the erection of an hotel (exclusive of cooking apparatus and hot-water supply), at Great Marlow, Bucks, for Colonel Owen Williams. Mr. W. H. Powell, architect Mr. T. Ladds, surveyor:—

Kempsell	£7,880 0 0
Longley	7,685 0 0
Carter	7,300 0 0
Stevens & Bastow	6,999 0 0
Carter & Son	6,999 0 0
Woodbridge	6,910 0 0
Lovell	6,720 0 0
Kearley	6,540 0 0
Gibson	6,275 0 0
For Pneumatic Bells.	
Homfray & Co.	£131 16 0
Zimdars	110 11 8
Edmundson & Co.	106 10 0

For erecting four warehouses, Charterhouse-street. Mr. E. N. Clifton, architect:—

Ashby, Brothers	£28,373 0 0
Morter	27,643 0 0
Holland & Hannen	27,181 0 0
Downs	26,925 0 0
Brass	26,390 0 0
Conder	25,995 0 0
Lawrence	25,300 0 0
Peto, Brothers	24,140 0 0

For the erection and completion of Board Schools, with class-rooms and offices, to accommodate 230 children respectively, Perran-ar-Worthal, Cornwall. Mr. Silvanus Trevail, architect:—

Searle	£1,475 0 0
Julian & Sons	1,356 0 0
Mayer	1,206 0 0
Hancock	1,140 0 0
Rickard	1,139 0 0
Broad & Gard	1,095 0 0
Blight (accepted)	985 0 0

For gaspipes and fittings, at the new baths and washhouses, Tottenham-court-road, for the Commissioners of St. Pancras. Mr. Gundry, architect:—

Richardson, Ellison, & Co.	£330 0 0
Abercromby	284 0 0
Buckley & Beach	254 0 0
Land & Co.	220 0 0

For fencing land, at Banstead, the site of the proposed Kensington and Chelsea School. Messrs. A. & C. Harston, architects:—

Taylor & Brooker (accepted)	£597 0 0

For erecting four villa residences (exclusive of painting and decorating, mantels, stoves, &c., and plate-glass), on the Priory Estate, Bromley-road, Lewisham, for Messrs. Warren & Froud. Mr. Wm. Theobalds, architect:—

Banks (accepted)	£1,400 0 0

For erecting warehouse and show-room, at St. Mary Cray, Kent, for Mr. Caleb Hosmer. Mr. Wm. Theobalds, architect:—

Wright, accepted.

For Seasalter sea defences, Kent. Mr. Thomas Ashenden, surveyor:—

Garrett	£9,552 0 0
Chamberlain	5,746 0 0
Foad	4,137 0 0
Stoddard	3,321 0 0
Batch (accepted)	2,600 0 0

For the erection of Board Schools, residence, and fences, at Stebbing, near Dunmow, Essex. Mr. H. Lovegrove, architect. Quantities by Mr. A. F. Wrightson:—

Whiffen & Sons	£3,145 0 0
Newman	2,666 18 7
Josolyne	2,549 0 0
Andrews & Son	2,449 0 0
Cock	2,432 0 0
Gardner & Son	2,379 0 0
Cornwall	2,310 0 0
Mason & Son	2,277 0 0
Brown	2,130 0 0

For the re-building of premises in Oxford-street, Bethnal-green, for Mr. Pereira:—

Beale	£431 0 0
Emery	405 0 0
Thomerson (accepted)	385 0 0

For re-building No. 99, Fore-street, Exeter, for Sir F. Bathurst, bart. Messrs. Tarring and Wilkinson, architects:—

Gillard	£4,469 0 0
Stile & Sons	4,441 0 0
Sharland	4,180 0 0
Scadding	3,829 15 6
Stralford *	3,785 0 0

* Accepted, subject to reduction.

For master's house, at Old Goole, for the Goole School Board. Mr. Wm. Watson, architect:—

Elliott (Excavating, Brick, Stone, &c.)	£312 0 0
Rawlins (Slating)	58 0 0
Tasker (Carpenter and Joiner)	123 0 0
Backhouse (Plumbing, Glazing, & Ironwork)	67 5 0
Shutcliff (Painting)	14 9 0

Accepted for Board Schools, at Lingwell Gate, for the Stanley-cum-Wrenthorpe School Board. Mr. W. Watson, architect:—

Wilson (Excavating, Brick, and Stone) ...	£419	0	0
Stewart (Slating) ...	56	0	0
Eastwood (Plastering) ...	29	10	0
Cheeseborough (Carpenter and Joiner) ...	142	15	0
Johnson (Plumbing, Glazing, & Ironwork)	75	0	0
Turner (Painting) ...	12	10	0

For the erection of house and boundary-walls, for Mr. W. Sims, Crouch-hill, near London. Mr. A. J. Rouse, architect:—

	For House.	Garden-walls.
Webbe ...	£1,843	£149
Whiteley ...	1,797	83
Knight ...	1,772	192
Niblett ...	1,755	159
Steed, Brothers ...	1,750	159
Webber ...	1,715	134
Cox ...	1,705	115
Gibson & Guthrie ...	1,670	137
Parker & Evans ...	1,636	129
Matlock, Brothers ...	1,613	133
Newton & Triggs ...	1,606	148
Boyd ...	1,580	135
Clack ...	1,529	135
Warr ...	1,397	129

Accepted for new National Provincial Bank of England, at Loftus-in-Cleveland, erecting by the Right Hon. the Earl of Zetland. Mr. A. J. Martin, architect:—

Dickinson (Excavator, Mason, Bricklayer, Plasterer, Slater, Carpenter, and Joiner—all stone supplied free) ...	£1,420	0	0
Boddy (Plumber) ...	70	8	6
Webster & Son (Painting, Gasfitting, &c.)	203	0	0
Robinson, Brothers (Ironmongery, &c.)...	72	4	11

For new school-house for the district of St. Mary Bolton, West Brompton. Mr. J. Peacock, architect. Quantities by Messrs. Gardiner, Son, & Theobald:—

Stephenson ...	£2,986	0	0
Hockley ...	2,984	0	0
Smith ...	2,750	0	0
Adamson & Son ...	2,578	0	0
Gregory ...	2,563	0	0
Lathey, Brothers ...	2,500	0	0
Nightingale ...	2,443	0	0

For the erection of corporation stabling, cart-sheds, foreman and housekeeper's houses, &c., at South Shields. Mr. Matthew Hall, borough engineer and surveyor. Quantities by Mr. George Connell:—

Lawson, Brothers, & Lowes ...	£6,726	0	0 !
Lawson ...	5,234	10	6
Harwood ...	4,749	3	2
Leighton ...	4,707	13	0
A. & P. Marshall ...	4,434	3	3
Moore ...	4,415	1	7
Douglass ...	4,414	2	3
Hutchinson & Sedgwick ...	4,246	6	6
R. H. & J. Nicholson ...	4,167	8	7
Alexander ...	4,138	5	0
Elliott ...	4,110	0	0
Summerbell & Young ...	4,040	0	0
Mackey ...	4,039	9	8
Storrar ...	3,998	0	0
Gilfillan ...	3,996	8	0
Suddards ...	3,976	0	0
Allison ...	3,920	0	0
Purvis ...	3,894	10	0
Atkin & Co. ...	3,877	5	0
Halliday & Christie ...	3,845	3	8
Kennedy & Co. (accepted) ...	3,741	10	0
Miller (withdrawn) ...	3,015	7	5 !

For mansion, at Hampstead, for Mr. E. Long, A R A. Mr. Norman Shaw, architect. Messrs. Franklin & Andrews, surveyors:—

Bumford ...	£7,565	0	0
Conder ...	6,756	0	0
Simpson & Son ...	6,689	0	0
Brinstead & Co. ...	6,634	0	0
Manley & Rogers ...	6,527	0	0
Lascelles ...	6,300	0	0
Braid & Co. ...	6,249	0	0

For making and kerbing roads, laying sewers, &c., on the Millbrook Estate, Edmonton, for Mr. S. Bird. Messrs. Whitmore & Kennard, surveyors. Quantities supplied:—

Killingback ...	£2,257	0	0 !
Williamson ...	1,874	0	0
Crockett ...	1,500	0	0
Bloomfield ...	1,411	0	0
F. & F. J. Wood ...	1,382	0	0
Jackson ...	1,250	0	0
Pound ...	1,152	0	0
Taylor ...	1,138	0	0
Ratty ...	1,130	0	0 !

For new house, Berry Stede Estate, Ascot, near Windsor. Mr. W. J. Hopkins, architect. Mr. Lewis Sheppard, surveyor:—

Warne ...	£6,140	0	0
Patrick & Son ...	6,060	0	0
Carter ...	5,940	0	0
Williams & Son ...	5,823	0	0
Silver & Son ...	5,780	0	0
Terry ...	5,494	0	0
Wood & Son ...	5,419	0	0
Kimberley ...	5,225	0	0
Braid & Co. ...	5,100	0	0
Claridge ...	5,050	0	0
Shapley & Co. ...	5,030	0	0
Watson ...	4,970	0	0
Boyce ...	4,883	0	0
Harris ...	4,823	0	0
Norris ...	4,674	0	0
Inwood ...	4,555	0	0

TO CORRESPONDENTS.

A. J. R.—S. G.—C. B.—G. L.—H. L.—R. H.—S. T.—C. L.—M. H. J.—H. H.—J. B.—J. N.—T. G.—P.. Brothers.—W. H. P.—Messrs. P.—J. W. S.—F. P.—A. & C. H.—G.—W. T.—R. S.—H. G.—T L.—G. W.—A. G.—F. C.—F. B. P.—R. G. (list and amounts should be sent).—N. C. (thanks for good feeling).—J. B. & B. (on its bed).—Constant Subscriber (we cannot interfere in private disputes).—Manchester Fish Market (not legible).—J. W. (next week).

We are compelled to decline pointing out books and giving addresses.

All statements of facts, lists of tenders, &c. must be accompanied by the name and address of the sender, not necessarily for publication.

Note.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

CHARGES FOR ADVERTISEMENTS.

SITUATIONS VACANT, PARTNERSHIPS, APPRENTICESHIPS, TRADE, AND GENERAL ADVERTISEMENTS.

Six lines (about fifty words) or under ... 4s. 6d.
Each additional line (about ten words) ... 0s. 6d.

Terms for series of Trade Advertisements, also for Special Advertisements on front page, Competitions, Contracts, Sales by Auction, &c. may be obtained on application to the Publisher.

SITUATIONS WANTED.

FOUR Lines (about THIRTY words) or under ... 2s. 6d.
Each additional line (about ten words) ... 0s. 6d.

REPLIES TO ADVERTISEMENTS,
Adressed Box ——, Office of "The Builder,"
Cannot be forwarded, but *must* in all cases be *called for*, and the Office Receipt produced.

THE CHARGE FOR A BOX IS AS UNDER:—
For "Situations Wanted" Advertisements ... 3d. per Week.
For all other Advertisements ... 6d. per Week.

PREPAYMENT IS ABSOLUTELY NECESSARY.

*** Stamps *must not* be sent, but all small sums should be remitted by Money Order, payable at the Post-office, King-street, Covent-garden, W.C. to DOUGLAS FOURDRINIER, addressed to No. 46, Catherine-street, W.C.

Advertisements for the current week's issue must reach the office before THREE o'clock p.m. on THURSDAY.

The Publisher cannot be responsible for TESTIMONIALS left at the Office in reply to Advertisements, and strongly recommends that COPIES ONLY should be sent.

Bath Stone of best quality.
BANDELL, SAUNDERS, & CO. (Limited),
Quarrymen and Stone Merchants.
List of Prices at the Quarries and Depôts, also cost of transit to any part of the Kingdom, or application to
Bath Stone Office, Corsham, Wilts. [Advt.]

Asphalte.
Seyssel, Patent Metallic Lava and White Asphaltes.
T. STODART & CO.
Office:
No. 90, Cannon-street, E.C. [Advt.]

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 38, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. [Advt.]

Whitland Abbey Green Slates.—These slates are of a grey green tint, are stout, and made in all sizes. A large stock available for immediate delivery.—For further particulars, apply to MANAGER, Clynderwen, R.S.O., Carmarthenshire.—[Advt.]

J. Sessions & Sons, Docks, Gloucester, Manufacturers of ENAMELLED and PLAIN SLATE CHIMNEY-PIECES, URINALS, &c. WELSH ROOFING SLATES direct from Quarries, to any station in the Kingdom. Prices and terms on application. [Advt.]

VERITY BROTHERS.

Patent Ventilator, or Air-Propeller, for the introduction of Cold or Warm air into Dwellings, &c.

The machine may be seen in action at their Show-rooms, 127, Regent-street, London, W.

The apparatus consists of a drum with a double set of fans, which are worked by a fly-wheel placed in the centre, and on the same axle as fans. The motive for this fly-wheel is arrived at by a small jet of water being directed on to it, causing both the wheel and fans to revolve with great velocity; the air passing through the machine at a rate equal to 2,500 feet per minute, if desired, according to size of apparatus.

N.B.—The above machine may be used either as an exhauster or injector, as may be preferred, or both objects combined.

Also Patentees of the Fireclay Burners for Gas Fires and Cooking Purposes, and Patentees of the Tubular Gas Boiler for Baths and Conservatories, &c.

Designers and Manufacturers of Lamps and Candelabra.

Office and Works, 155, Queen's-road, Bayswater, W. [Advt.

MICHELMORE & REAP,
Manufacturers of
CHARLES COLLINCE'S PATENT
COLLINGE'S PATENT HINGES, LEVER, SCREW, & BARREL BOLTS,
and IMPROVED GATE FITTINGS of every Description.
36A, BOROUGH ROAD, LONDON, S.E.
Discount to Builders.
Illustrated List, two stamps.

NOTICE.
MESSRS. THOMAS DOCWRA & SON, CONTRACTORS, BALL'S POND ROAD, hereby give Notice that they have no Business Connexion with any other person of the same Name.

DRAWINGS, Specifications, and Estimates for Buildings or Alterations ACCURATELY and EXPEDITIOUSLY PREPARED By a good practical Draughtsman. A. B. No. 2, Boscobel-gardens, Alpha-road, N.W.

NOTICE.—To ARCHITECTS and all who DRAW PLANS.—TO BE SOLD, a great bargain, a magnificently-executed set of improved STENCIL PLATES for expediting the Lettering on Plans. The set consists of nine complete Alphabets of various kinds, Plain, Shaded, and Ornamental, three sets of Figures, and sixty plates of all the principal Words used upon Architectural Drawings in various types, in a mahogany box, with brushes. Price for the whole 30s worth from 6l. to 7l.; they are quite new, never having been used, being the remaining portion of a stock of an instrument-maker retiring from business. Specimens or the Case of Plates sent for inspection on application to Mr. F. TASKER, No. 94, Holloway-road, Highbury, London, N.

USED BY THE LEADING RAILWAYS AND ENGINEERS.
MARION'S FERRO-PRUSSIATE PROCESS. A very simple method of reproducing Engineers' and Architects' Drawings. Specimens and instructions free on Application.—No. 23, Soho-square, London.

OFFICE.—ARCHITECT'S ASSISTANT requires use of an OFFICE for a few weeks. Would give a day's services a week.—Mr. NEY, 72, Chiswell-street, E.C.

TO ARCHITECTS.—An Architect having OFFICES in the best situation in MANCHESTER would be glad to meet with a Tenant who would take his complete Fittings and Fixtures at a very reasonable valuation.—ALPHA, Mr. Wheeler, Newsagent, Pall-mall, Manchester.

TO UNSUCCESSFUL COMPETITORS.
WANTED, a SET of DESIGNS for SCHOOL BUILDINGS, by a country Architect unable to prepare in time for a limited competition.—C. H. D. Curling & Doggett, 3, St. Michael's-alley, Cornhill, London.

TRELOAR & SONS,

Contractors to H. M. Office of Works.
Contractors to the Admiralty.
Contractors to the War Office.
Contractors to South Kensington Museum.
Contractors to the Royal Albert Hall.
Contractors to the Crystal Palace.
Contractors to the Alexandra Palace.
Contractors to the Royal Aquarium.

COCOA-NUT FIBRE MATS, MATTING,
Floor Cloth, Linoleum, Turkey Carpets and Rugs.
69, LUDGATE HILL.
ESTIMATES AND CATALOGUES FREE.